DRUG & COSMETIC INDUSTRY

DECEMBER, 1952

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THOMAS R. FARRELL, Editor
FRANCIS CHILSON, Production Consultant
MILTON A. LESSER, Technical Editor
HARRY G. KELBLY, Raw Material Editor
FRANK CHILD III, News Editor
MAX FRANKEL, Art Director

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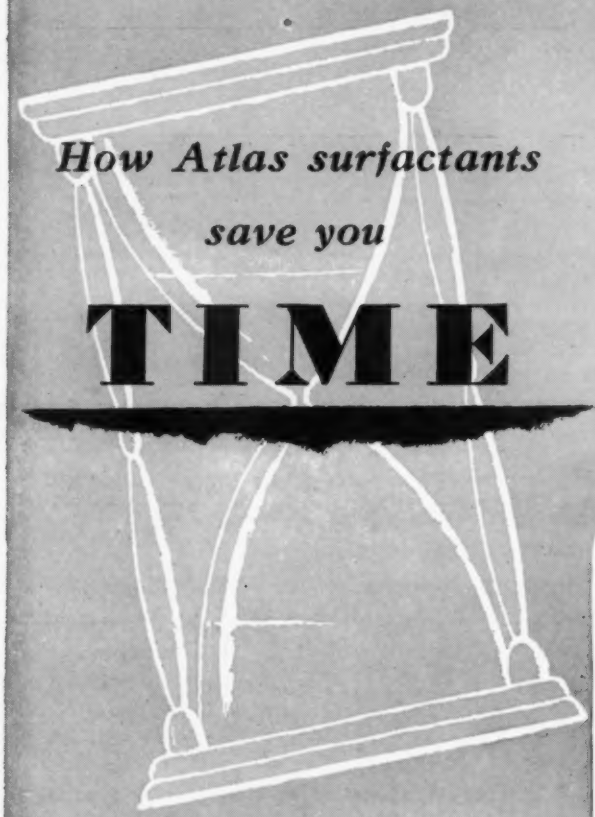

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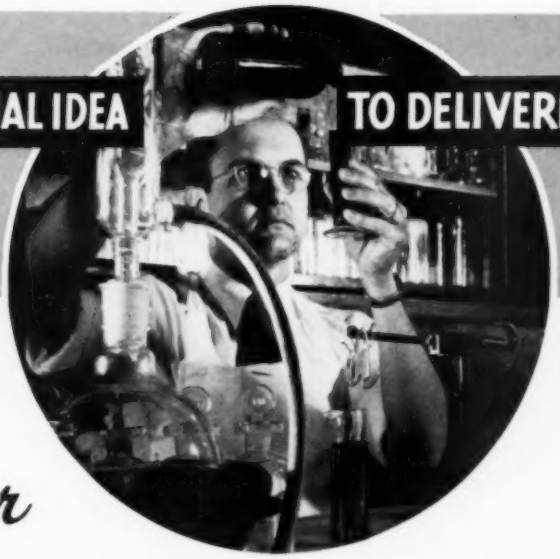

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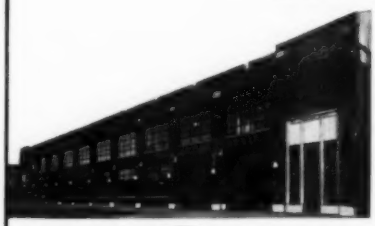

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OINTMENTS

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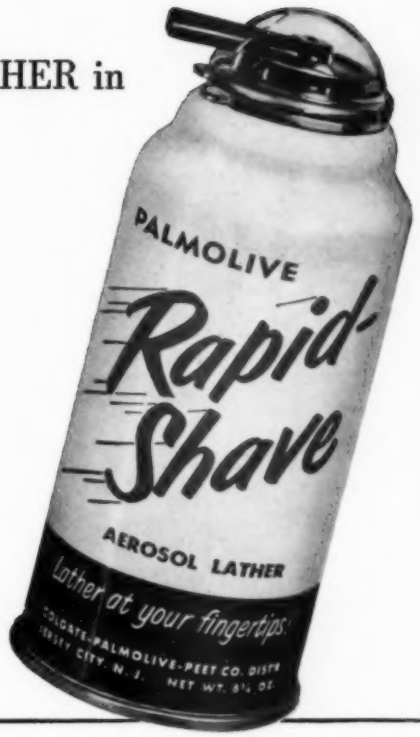
ORIGINATORS AND DEVELOPERS OF THE AMPIN® FOR AUTOMATIC, SUBCUTANEOUS AND INTRAMUSCULAR INJECTION

Q.

Who puts the LATHER in



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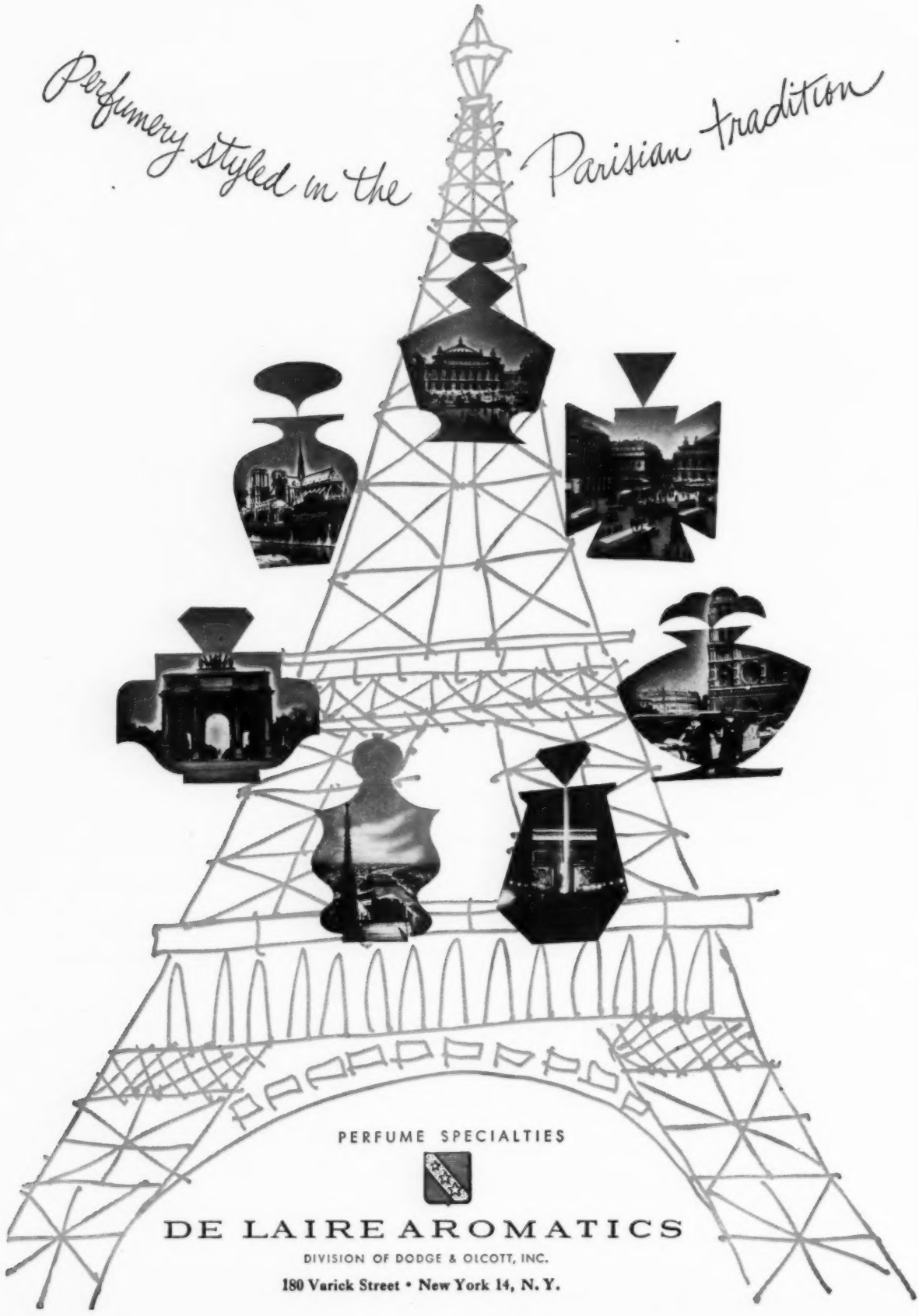
DON'T MISS "STRIKE IT RICH," WCBS, CHANNEL 2, 9 P.M., E.S.T., WEDNESDAY.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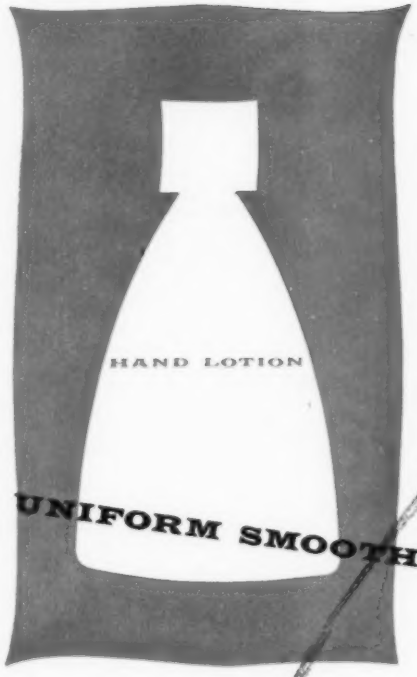

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KEEP TIGHTLY CLOSED AND IN A COOL PLACE
MADE IN U.S.A.
MANUFACTURED BY
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QUALITY SINCE
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For 25 years McKesson and Robbins' formula for Glycerine suppositories has remained unchanged. Public confidence in Glycerine as an effective ingredient has been thoroughly demonstrated by the wide acceptance of this product as a familiar "medicine cabinet" accessory.

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Hundreds of applications in a host of proprietary pharmaceuticals attest to the fact that Glycerine has won the trust of American consumers over the years . . . that its presence on your label is accepted instantly . . . that it is widely recognized as a product which can be safely applied internally or externally. We've outlined some of these applications in a booklet, "Why Glycerine for Drugs and Cosmetics?" Write for your copy—today!

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More and more manufacturers of cosmetics, soaps and toilet preparations of all kinds have come to depend on *Synfleur* for their needs. Our laboratories are at your disposal, too.

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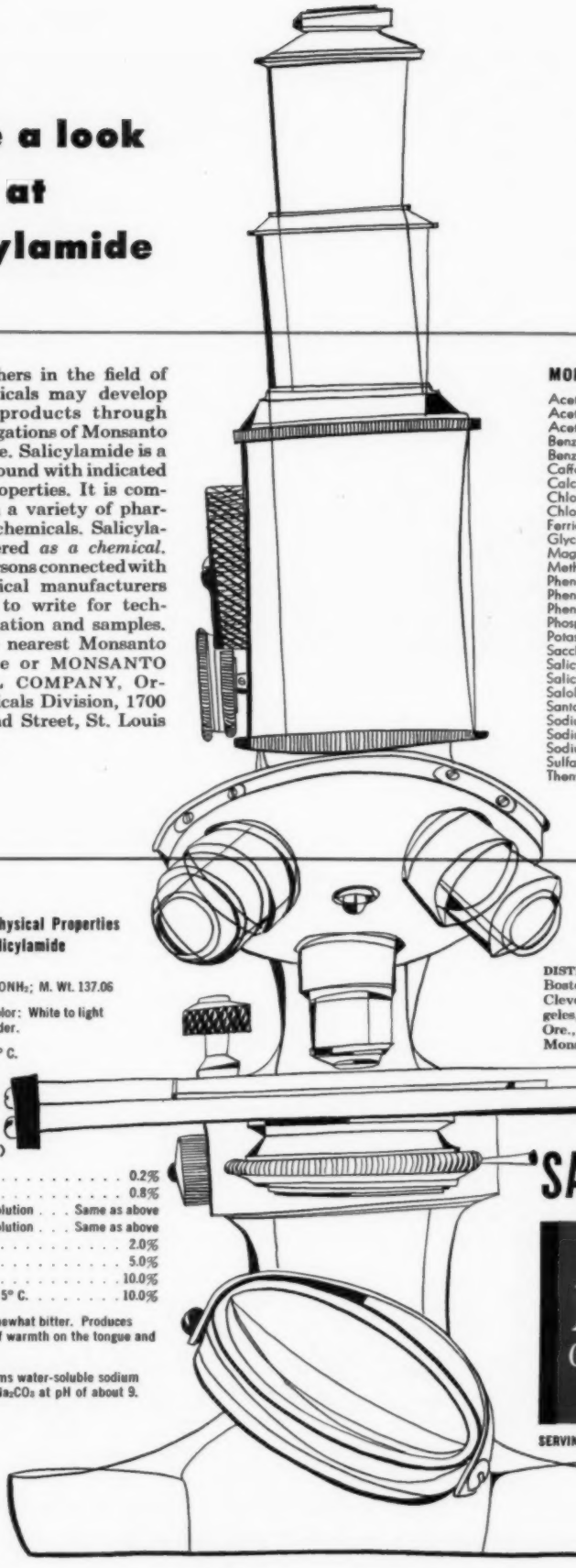
Take a look at salicylamide



. . . Researchers in the field of pharmaceuticals may develop profitable products through their investigations of Monsanto Salicylamide. Salicylamide is a stable compound with indicated analgesic properties. It is compatible with a variety of pharmaceutical chemicals. Salicylamide is offered *as a chemical.* Qualified persons connected with pharmaceutical manufacturers are invited to write for technical information and samples. Address the nearest Monsanto Sales Office or MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

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Benzyl Benzoate, U.S.P.
Caffeine, U.S.P.
Calcium Phosphate, Di
Chloral Hydrate, U.S.P.
Chloramine-T
Ferric Phosphates
Glycerophosphates
Magnesium Phosphates
Methyl Salicylate, U.S.P.
Phenol, U.S.P.
Phenolphthalein, U.S.P.
Phenylacetic Acid and derivatives
Phosphoric Acid
Potassium Ammonium Phosphate
Saccharin, U.S.P.
Salicylamide
Salicylic Acid, U.S.P.
Salol (Phenyl Salicylate)
Santophen 1
Sodium Benzoate, U.S.P.
Sodium Phosphate, Di
Sodium Salicylate, U.S.P.
Sulfanilamide, U.S.P.
Thenylpyramine HCl and derivatives

Santophen: Reg. U. S. Pat. Off.

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Formula: $HOC_6H_4CONH_2$; M. Wt. 137.06

Appearance and Color: White to light cream-colored powder.

Melting Point: 139° C.

pH of Saturated Water Solution at 28° C.: 5.0 approx.

Solubility: (approx.)

Water at 30° C.	0.2%
Water at 47° C.	0.8%
20% Cane Sugar Solution	Same as above
50% Cane Sugar Solution	Same as above
Glycerin at 5° C.	2.0%
Glycerin at 39° C.	5.0%
Glycerin at 60° C.	10.0%
Propylene Glycol at 5° C.	10.0%

Taste: Initially somewhat bitter. Produces definite sensation of warmth on the tongue and in the throat.

Miscellaneous: Forms water-soluble sodium salt with NaOH or Na_2CO_3 at pH of about 9.

DISTRICT SALES OFFICES: Birmingham, Boston, Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia, Portland, Ore., San Francisco, Seattle. In Canada, Monsanto Canada Limited, Montreal.

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The Service consists of several features of which probably the best known is the "Trade Mark Record" and its supplements. It is a book of more than 750 pages which lists all registered trade marks in the field of perfumes, toilet preparations and soaps as well as thousands of additional marks in use but not registered in the United States Patent Office. Supplements are published at frequent intervals.

The Association also maintains a card file of additional registrations and unregistered marks so that its listings are kept constantly up to date. A glance at the "Record" and supplements and a telephone call to Association Headquarters accordingly furnishes any industry member a quick and accurate means of establishing whether any name he contemplates using is in conflict with a mark already in use.

Each week the Association's bulletin service advises members of marks registered in the Patent Office and marks published in the "Official Gazette" of the Patent Office for which registration is sought.

A further and almost unique service lists in bulletin form, marks which have been filed for registration with the Patent Office weeks and at times even months ahead of their publication in the "Official Gazette".

Why does your Association maintain such an elaborate and costly service? Because your trade marks are your most valuable assets in this highly competitive business. Our lists advise you what marks are in use when you are about to name a new item. They advise others of your ownership of a trade mark which otherwise someone might infringe. As incidental benefits these lists are frequently consulted by stores and buying offices in search of goods, by motion picture, radio and television writers to avoid fictitious use of names already being used, by advertising agencies, news writers, even by "The Answer Man" in efforts to advise the public about trade marked merchandise. Suppliers also benefit by learning of new prospective purchasers through these lists.

We are exceedingly and, we believe, justifiably proud of this unexampled service to our industry.

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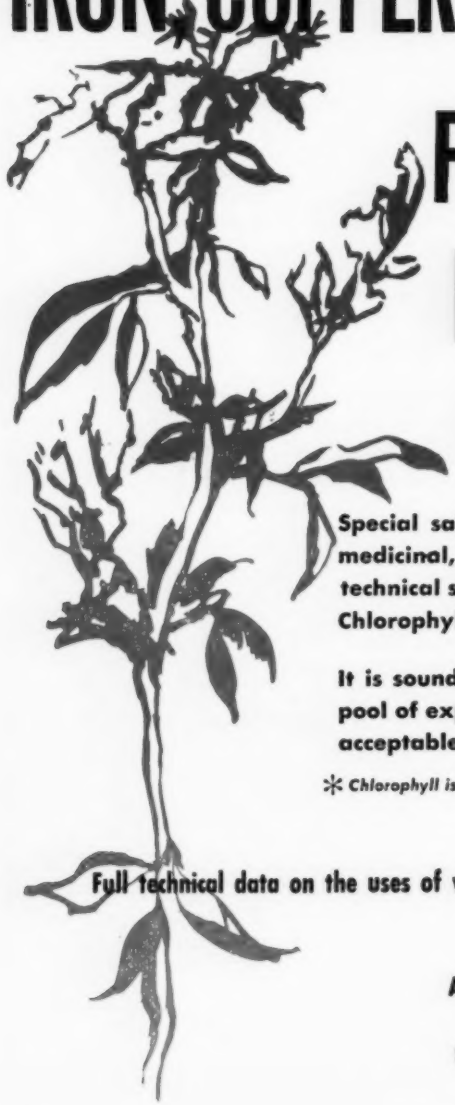

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American Distilled Oils

Produced at our Brooklyn Factory

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New evidence on Vitamin B_{12} for growth failure

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Further evidence of the ability of vitamin B_{12} to speed growth in children suffering from simple growth failure has been reported by Wetzel and his associates in Cleveland.*

This study now in progress for over three years involves some 20,000 observations in more than 300 children, in their usual home and school surroundings.

The new evidence is creating widespread interest in vitamin B_{12} as a dietary supplement. This, in turn, means a larger market for preparations containing vitamin B_{12}. Merck Vitamin B_{12} products are preferred ingredients for both oral and parenteral formulations.

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Reprints of this new study by Wetzel, *et al.*, which was published in the initial issue of the new *Journal of Clinical Nutrition*, are available from Merck & Co., Inc. The authors' conclusions, in part, are as follows:

"All of the foregoing evidence, therefore, supports the conclusion that vitamin B_{12} does exert a 'growth-promoting effect' *when given as a dietary supplement to children in growth failure*—and this evidence is exceptionally strong . . . The general benefits derived from the present study of vitamin B_{12} dietary supplements were felt well beyond the point at which individual children developed recovery responses . . . teachers in the classrooms became aware that at least some of the pupils were improving in behavior, attitude and scholastic work—or that they were showing less strain and fatigue, or, on the other hand, greater interest and attention, and hence better all-around progress than before. Voluntary expressions of similar import were offered by parents."

*Wetzel, N. C., Hopwood, H. H., Kuechle, M. E., and Grueninger, R. M.: *Journal of Clinical Nutrition* **1**: 17, September–October 1952.

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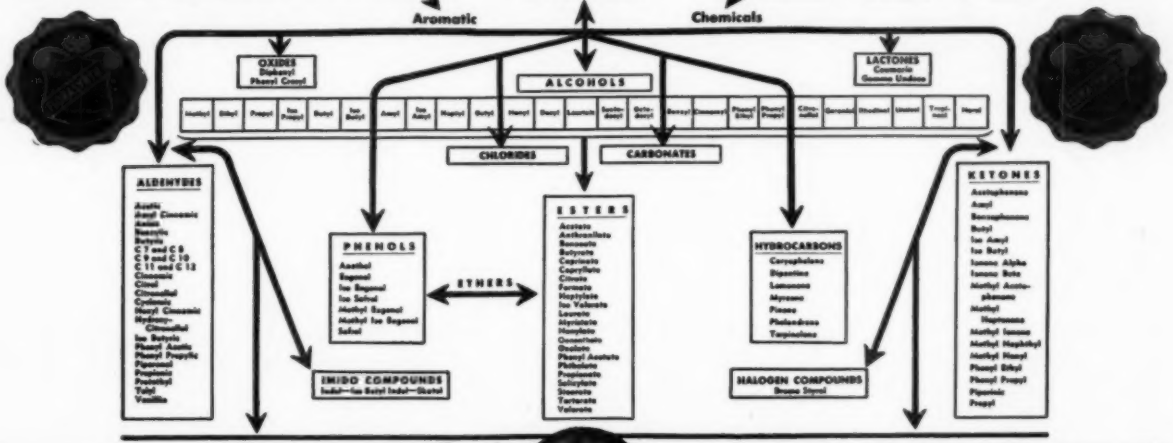

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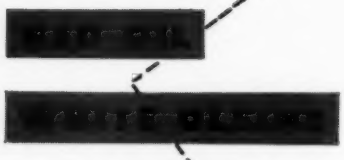

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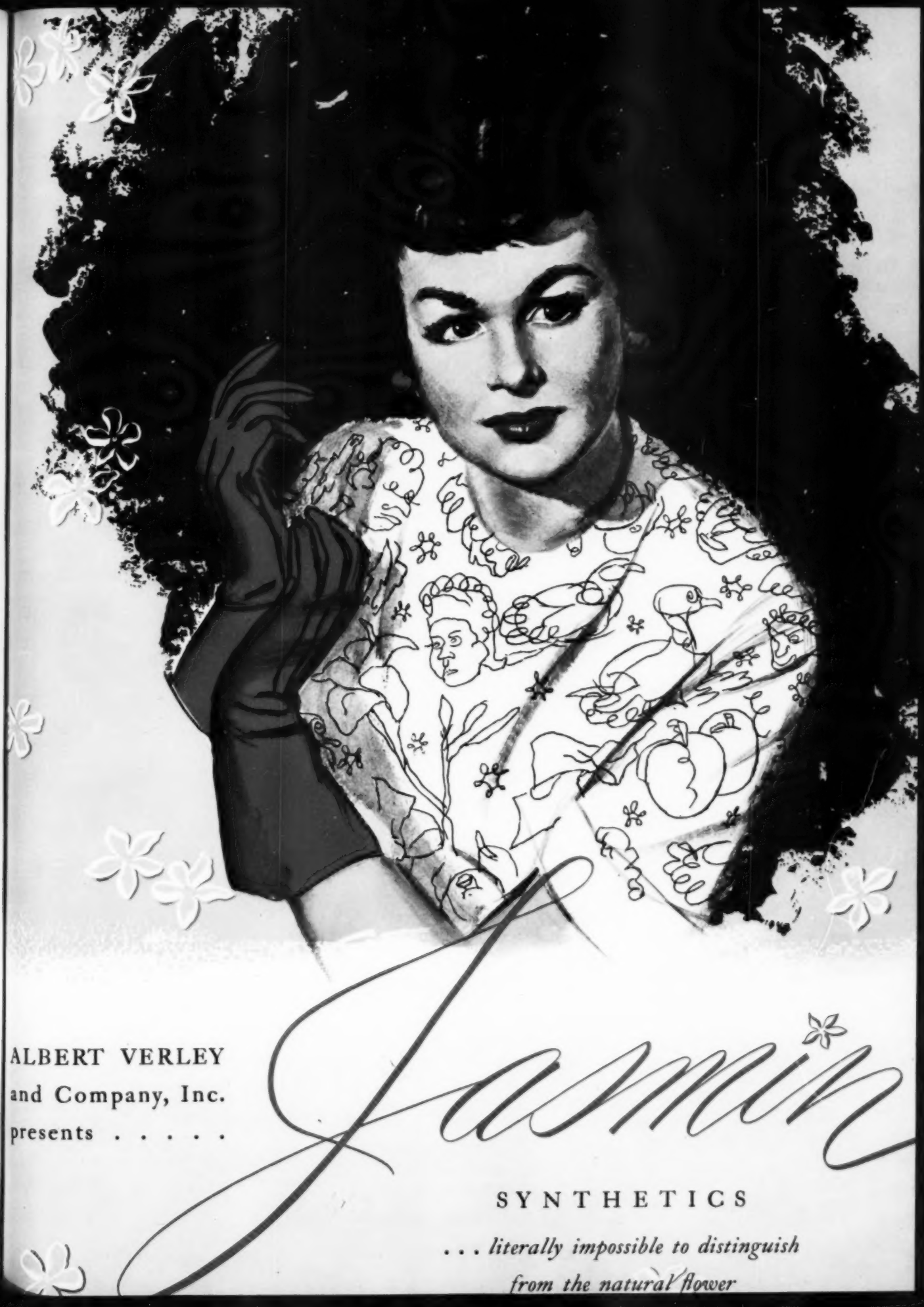
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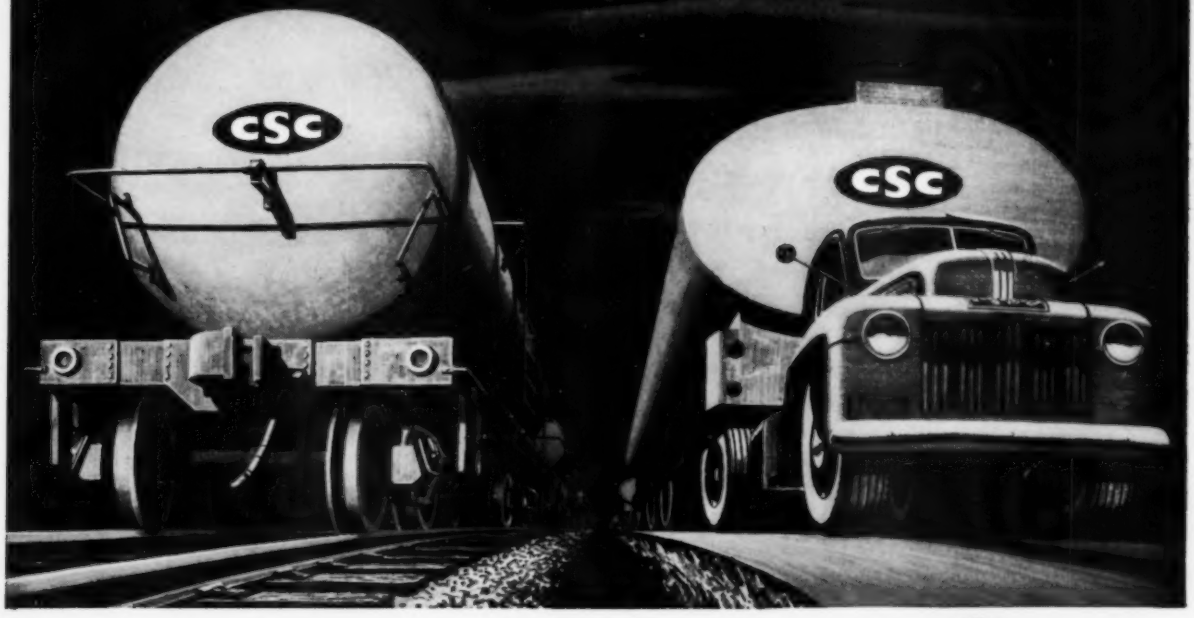

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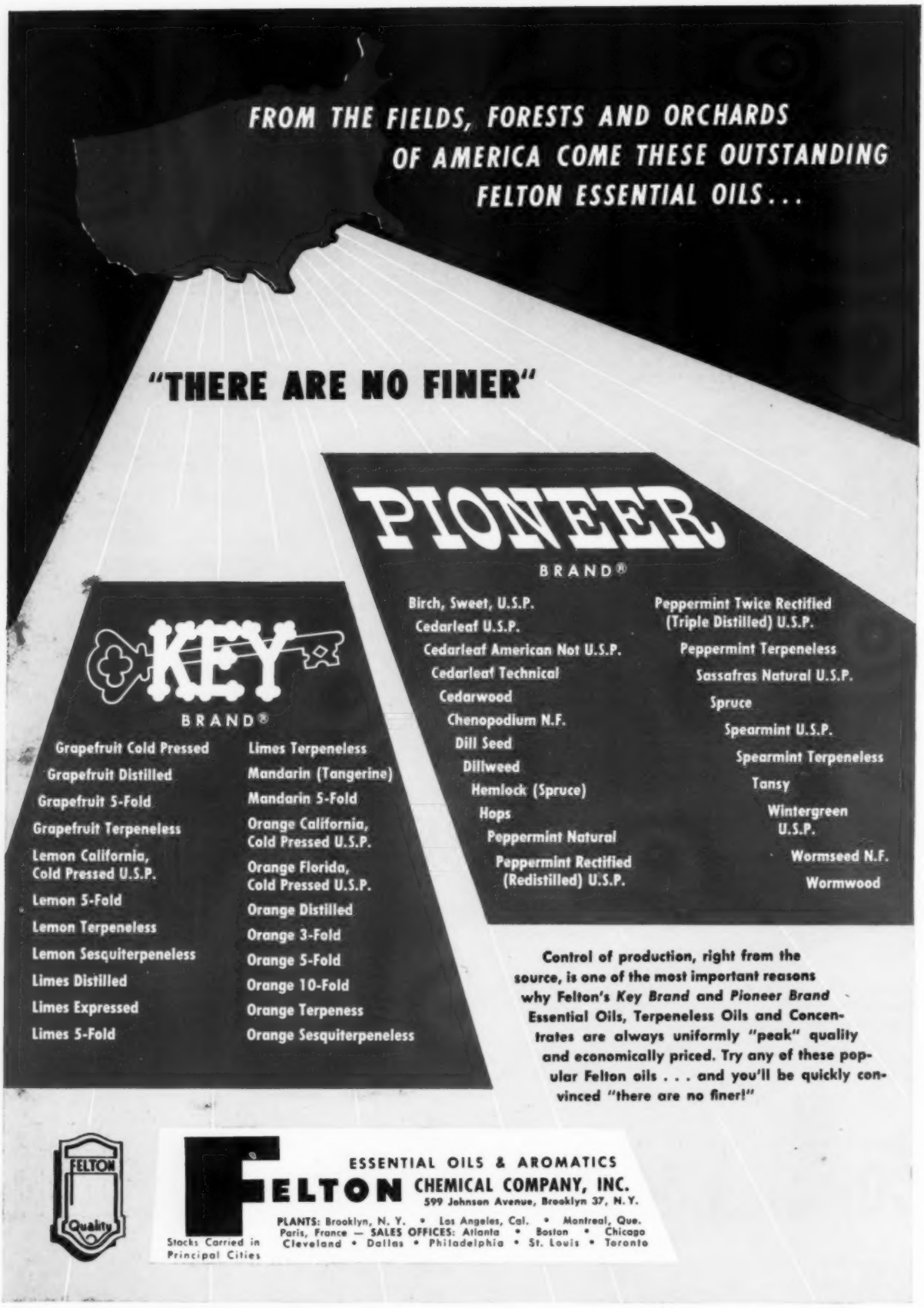
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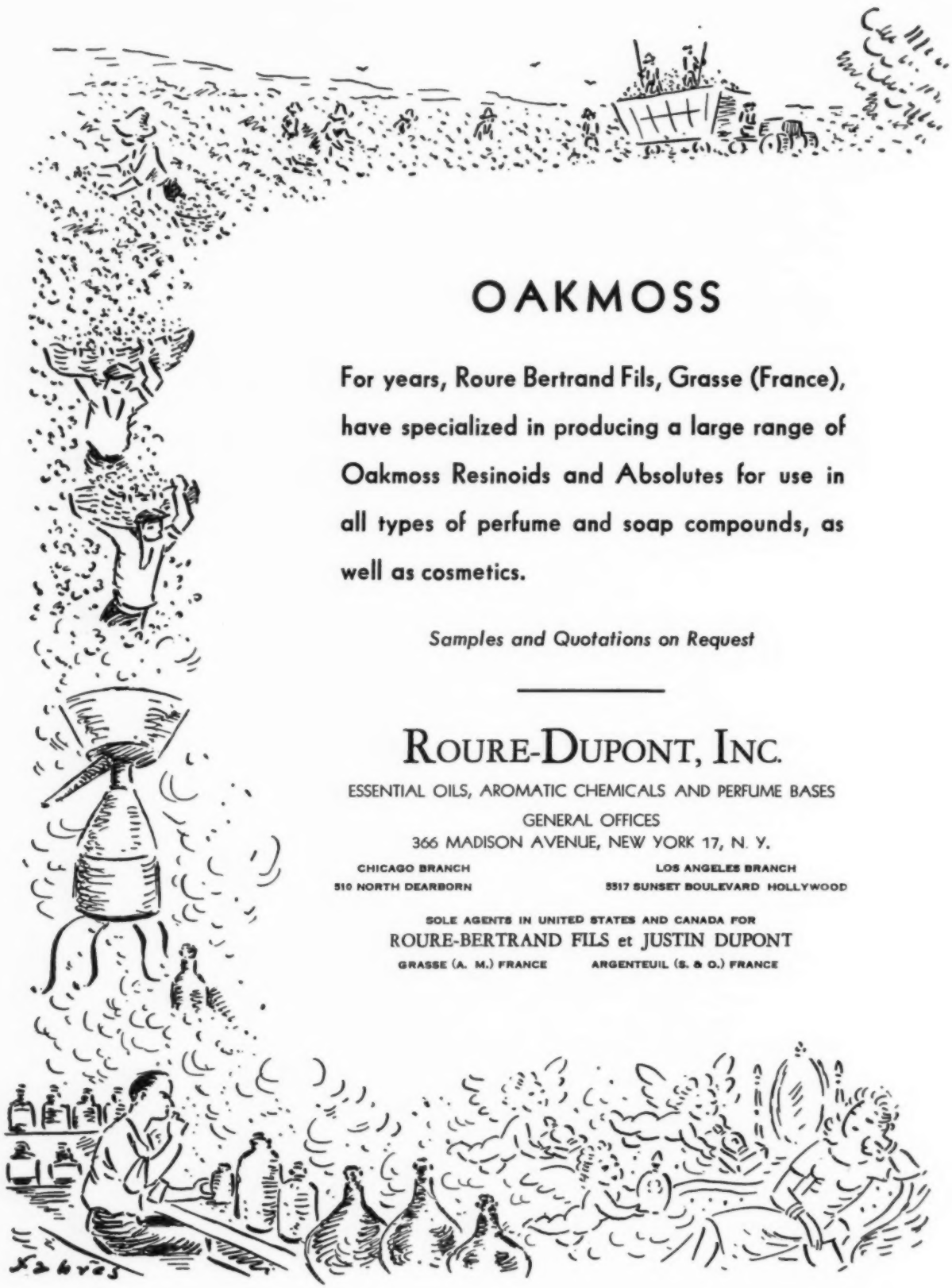

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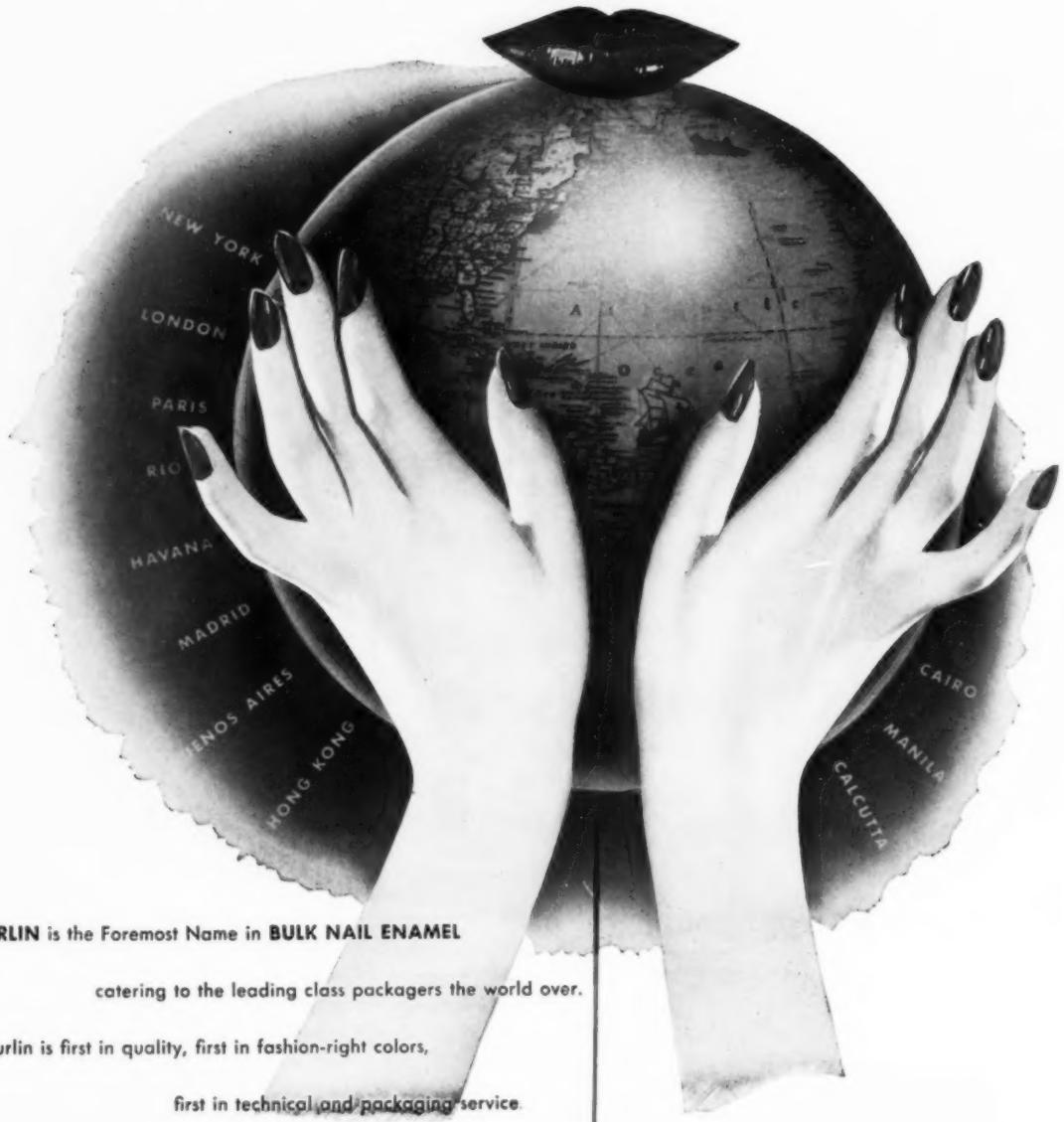

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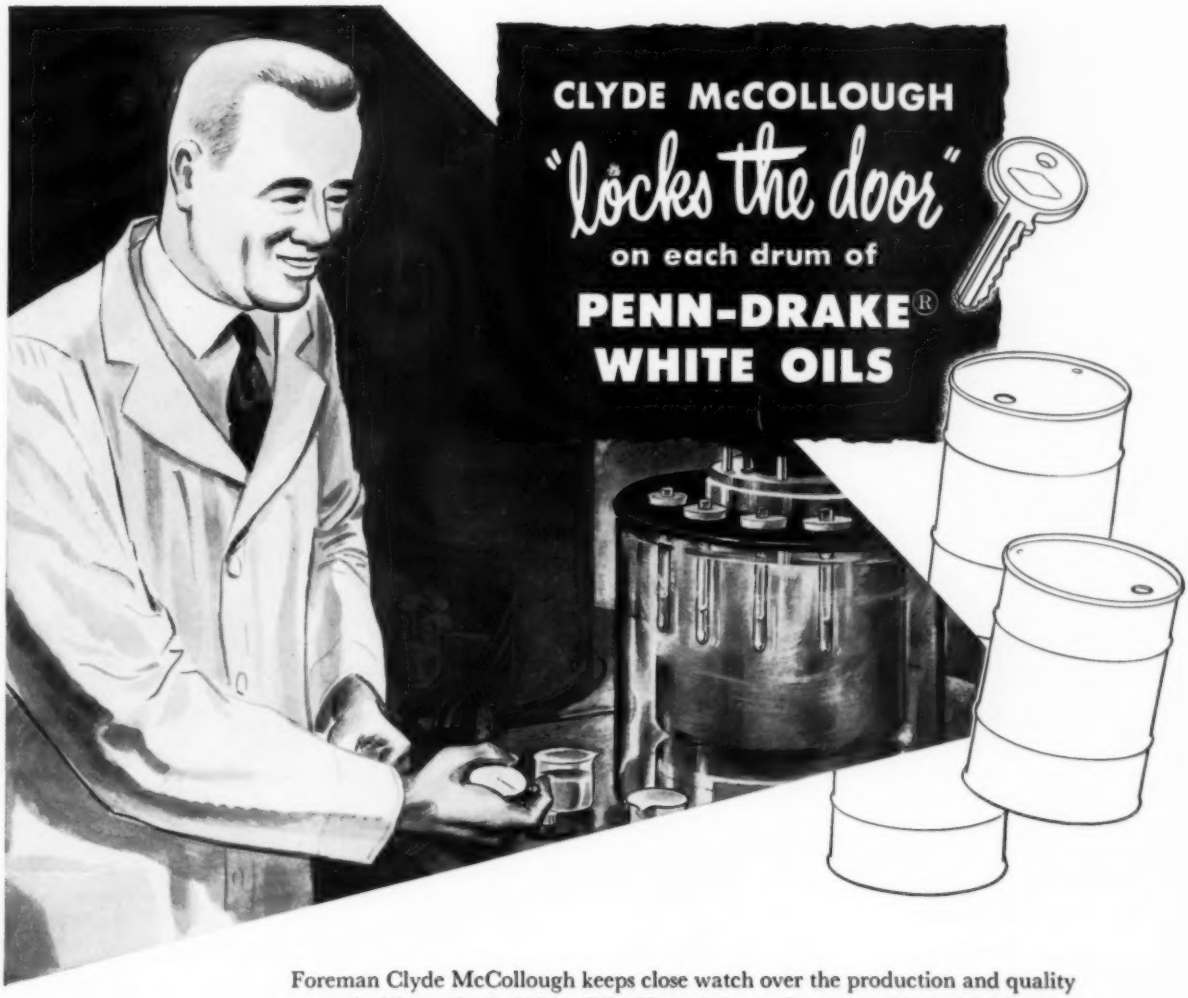

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December ★ A Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1952

Season's Greetings

From
U.S.I. CHEMICAL NEWS
to its many readers,
contributors, and associates

Investigate Gas Leaks Through Metal, Glass

Scientists at an industrial research laboratory are currently engaged in a project involving gas leaks so infinitesimal it would take 10,000 years to empty the contents of a pint bottle, according to a recent report. Reason for the research is that hydrogen and other gases can seek their way through solid glass and metal at these slow rates, and the leaks are sufficient to ruin the high vacuums used in other work, it is said. For example it was recently found that helium had leaked through the double walls of a vacuum space in a laboratory bottle. Later, when liquid nitrogen was placed in the bottle, the minute quantity of helium caused the nitrogen to boil away.

Investigations have revealed that gases differ in their ability to permeate various barriers. The very small permeation rates can be measured accurately by means of the mass spectrometer. Helium filters easily through glass and plastics, the report states, but fails to penetrate metals in any measurable quantities. Hydrogen, on the other hand, quickly invades metals as well as glass and plastics. Nitrogen penetrates steel but is effectively contained by copper, and oxygen slips through silver with comparative ease.

Tritium Plus Stilbene — Continuous Light Source

By incorporating tritium, super-heavy hydrogen from the Oak Ridge atomic reactor, into stilbene, a crystalline hydrocarbon compound, research workers have produced a material which acts as a substantially constant light source, it was disclosed recently. Explanation given for the phenomenon is that tritium continuously gives off beta rays which cause the stilbene to fluoresce. Because of this, the new crystals yield almost constant luminosity and yet have essentially no health hazards, it is claimed. Light from tritiated stilbene is visible to the eye, but the maximum light output is strongest in the region where the eye is least sensitive and where all phototubes are most sensitive. The new source is therefore expected to be useful in optical research and in calibrating instruments containing phototubes which have to be standardized periodically. Brightness of the crystals diminishes at the rate of about five per cent each year, whereas radium-activated sources of the type now used lose half their light in about three to six months, it is said.

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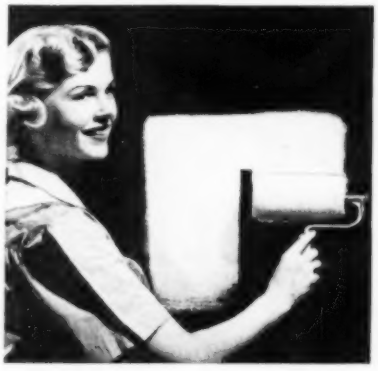
Tailor-Made Alkyds for Flat Wall Finishes, In Both Conventional and Odorless Solvents, And for Latex Paints Fill All Requirements

Visitors at U.S.I.'s booth at the Paint Industries' Show last month in Chicago saw an exhibit by the first single manufacturer to offer a line of alkyd resins which fill the requirements of both major classes of decorative wall finish manufacture. Now, whether a paint manufacturer's vote is for alkyds or for latex, or split between these two principal categories of decorative wall finishes, he can choose his resins for either type of product from U.S.I.'s complete line of raw materials for the paint industry.



Making the job easier is one of U.S.I.'s chief aims in developing resins for the paint industry. For the manufacturer, this means alkyd resins that are easier to handle in any quantity. For the ultimate consumer, it means finishes that are easier to apply by either brush or roller.

U.S.I. makes no attempt to predict the relative positions that latex paints will take in the wall finishes market as compared to

MORE

Test New Safety Device For P., V., & L. Industry

Independent laboratory tests have reportedly confirmed the utility of a new tool for providing safe working conditions in the paint, varnish, and lacquer industry. The tool is a complete "pocket-laboratory" device, described as simple and economical to operate, which measures atmospheric concentrations of aromatic hydrocarbons in the range of their threshold limit values for safe 8-hour daily exposures. Principle of the device is based on a specific color reaction on a gel surface. To conduct a test, two reagents are mixed, tamped into a glass tube, and the tube inserted into a detector between the source of contaminated air and a squeeze bulb. The contents of the tube, initially white in color, turn brown only after exposure to benzene, toluene, or xylene. Concentrations are then read directly in parts per million by matching the length of brown stain in the tube with the proper scale placed beside it.

Tests using known concentrations of aromatic hydrocarbons gave good results with single compounds, somewhat higher than additive values for mixtures of two or more. The presence of masking deodorants and other organic vapors were found to cause no interference, according to the report.

Vitamin B_{12} Found Useful In Treating Polyneuritis

In their recent report on the use of vitamin B_{12} to treat patients with neurological disease, two French doctors have concluded that the vitamin has a positive action on early polyneuritis. In their tests, they were able to obtain noticeable improvement in 17 of 43 patients with multiple sclerosis of average intensity. Four of the patients were able to resume their normal occupations after years of illness and failure of all previous treatment. Functional improvement was obtained in eight patients with spastic paraplegia, and four patients who were formerly invalids were able to resume former activities after treatment. Results in seven cases of polyneuritis were described as spectacular, with three of the patients being cured within one week.

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CONTINUED

Tailor-Made Alkyd Resins

alkyd types. The company is proud, however, of the pioneering part it has played in regenerating a lagging consumer market with developments which have improved both classes of finishes.

AROFLATS Lead the Way

Alkyds evolved as vehicles for interior and exterior enamels during the 1940's, with temporary interruptions during the war because of critical raw material shortages. While consumers benefited from the improved qualities alkyds imparted to enamels, it was not until late 1949, with the introduction of U.S.I.'s AROFLAT 3010, that alkyds began to influence the largest volume class of interior paints—decorative and flat wall finishes. AROFLAT 3010 was the first pure alkyd, specifically designed as the sole vehicle for flat wall finishes, to be placed on the market. It met with rapid and wide acceptance in multiple coat systems, and was followed a few months later by AROFLAT 3025—the first pure alkyd offered for use as the sole vehicle in self-sealing wall paints. U.S.I.'s alkyd vehicle line was completed a year later with the introduction of AROFLAT 3050, designed to meet demands for more economical alkyd flat paints of good quality.

AROPLAZ Resins and Latex

By the time latex paints appeared on the horizon as a promising innovation in the home decoration field, U.S.I. had already been the first to make alkyd vehicles available in odorless mineral spirits. Thus paint manufacturers were able to compete with the new threat to alkyds' supremacy from the start. At the same time, it was realized that latex paints were here to stay, and with several years background in emulsion research already behind them, U.S.I. laboratories soon introduced the first alkyd specially designed for latex paints—AROPLAZ 1274. This resin, when properly emulsified and mixed with latex, overcomes tendencies of pure latex toward poor adhesion and poor scrubability when wet. It also contributes better color retention, greater freeze-thaw stability and greater latitude of pigmentation—all at no increase in raw material costs of the finished paint.

New Ink Transfer Method Imprints Rubber, Plastics

The first successful one-operation process for transferring multi-colored printed impressions from paper to either rubber or plastics was announced in a recent report. Said to permit true reproduction of 300-screen half-tones in color, the new ink transfer process requires a separate printed label, on a type of paper similar to magazine stock, for each transfer. No special kind of printing ink is needed. The method is described as economical and rapid, and because a slight curing operation permanently seals the impression, the transferred image will last as long as the surface on which it is printed, it is claimed. Applications are foreseen in the imprinting of various sidewall color combinations on tires, patterns on plasticized vinyl chloride and other plastic products, and labelling on conveyor belting and rubber matting.

Pre-Mixed Reagent Tablets Save Time for Analysts

For the analytical chemist who determines total nitrogen by the old reliable Kjeldahl method, what is claimed to be a great time saver is now available in the form of compressed tablets containing the standard formulas for catalyzing digestion of organic matter. Now, instead of making the three weighings usually required and carefully washing down the neck of the flask afterwards, the analyst simply slides one or two tablets, depending on the method he is using, into the flask, and proceeds. The tablets are available in three formulations, each of which provides all the catalytic ingredients necessary for one determination according to procedures in general use. Chemicals used to make the tablets are precision weighed, ground, and blended in large quantities to insure uniformity, and are bound with a special material which does not affect the reaction, it is said.

TECHNICAL DEVELOPMENTS

Information about manufacturers of these items may be obtained by writing U. S. I.

Pressure-sensitive labels which require no licking, available in roll tape form in a hand dispenser, can be marked with pencil, pen, or typewriter, and adhere to "anything" under all laboratory conditions, it is claimed. **(No. 871)**

A magnetic door latch, suitable for any type of cabinet, has no working parts to wear out and is said to keep even sagging or warped doors firmly closed. **(No. 872)**

For coating or decorating polyethylene products, a new synthetic enamel is available, in a wide range of colors, which reportedly adheres well without peeling or chipping and can be brushed or sprayed. **(No. 873)**

New anti-rust paints, in black and clear, are claimed to absorb surface rust completely in their penetration process and to stop and prevent further rust—indoors or out—without prior scraping and wire-brushing. The clear paint can be painted over with other paints. **(No. 874)**

A new tarnish remover for silver, bronze, and copper has been announced. To clean, the article is immersed in the clear, non-poisonous liquid for about 10 seconds. No rubbing or scouring is needed, it is said. **(No. 875)**

Bacteria that break down masonry can be checked permanently, it is reported, with a new active germicide which is incorporated into cement. Product is recommended for plant use and for shower room floors. **(No. 876)**

To bond metals to themselves, other metals, ceramics, glass, or wood, a new bonding agent in rod, powder, paste, and liquid forms is claimed to bond by capillary and chemical action, to have high fluidity and wetting ability, and to penetrate all but sealed joints. **(No. 877)**

For reducing glare in factories, hospitals, etc., translucent and colored plastic sheeting is on the market which, when cut to windowpane size, can be adhered to the glass indefinitely by applying wet and squeegeeing out the water. Plastic can be stripped off easily when desired, it is said. **(No. 878)**

A new paint and varnish remover for metals is reported to be non-inflammable, to act rapidly so that residues can be washed off with water and the metal repainted immediately. **(No. 879)**

A portable magnesium ramp for loading and unloading freight cars from ground level where no docking facilities exist, is now available in 5 standard sizes ranging in capacity from 6,000 to 16,000 pounds. **(No. 880)**

PRODUCTS OF U.S.I.

ALCOHOLS
Amyl Alcohol (Isoamyl Alcohol)
Butanol (Normal-Butyl Alcohol)
Fusel Oil—Refined
Propanol (Normal-Propyl Alcohol)

Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof U.S.P., Absolute—200 Proof
Solox*—proprietary solvent—regular and anhydrous

ANTI-FREEZE
Super Pyro* Anti-Freeze
U.S.I. Permanent Anti-Freeze

ETHERS
Ethyl Ether, U.S.P.
Ethyl Ether, Absolute—A.C.S.

ACETONE—A.C.S.

ANSOLS
Ansol* M
Ansol* PR

ACETIC ESTERS
Amyl Acetate—Commercial and High Test
Butyl Acetate
Ethyl Acetate—all grades
Normal-Propyl Acetate

OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate

PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate

OTHER ESTERS
Diatol*
Diethyl Carbonate
Ethyl Chloroformate

RESINS (Synthetic and Natural)
Arochem*—modified types
Arodure*—urea-formaldehyde resins
Arofene*—pure phenolics
Aroflat*—for special flat finishes
Araflint†—room temperature curing phenolic
Aroplaz*—alkyds and allied materials
Aropol†—copolymer modified alkyds
Ester Gums—all types
Natural Resins—all standard grades

INSECTICIDE MATERIALS
CPR Concentrates: Liquid & Dust
Piperonyl Butoxide
Piperonyl Cyclonene
Pyrenone* Concentrates: Liquid & Dust
Pyrethrum Products: Liquid & Dust
Rotenone Products: Liquid & Dust

INSECTIFUGE MATERIALS
Indalone*
Triple-Mix Repellents

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-chloroanilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloroanilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate

FEED PRODUCTS
Calcium Pantothenate (Feed Grade)
Curbay B-G*
DL-Methionine (Feed Grade)
Niacin, U.S.P.
Riboflavin Concentrates
Special Liquid Curbay*
U.S.I. Vitamin B_{12} and Antibiotic Feed Supplements
Vacatone* 40

OTHER PRODUCTS
Collodions
Ethylene
Methionine (Pharm. Grade)
Nitrocellulose solns.
Propionic Acid
Pib*—Liquid Insulation
Urethan, U.S.P.
Acetaldehyde
Propionaldehyde

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CREAMODORS—For all types of creams and lotions.

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2 *These retailers are nearly all (86%) located in the 168 metropolitan markets which do 75.27% of all apparel sales and over 85% of the perfume and cosmetic sales of selected cosmetic distribution.*

3 *The key to selling in these stores is the girl behind the counter. Beauty Fashion's club subscription, editorial policy, school training program and personal contacts have, over 35 years, made these girls an intimate part of Beauty Fashion's readers.*

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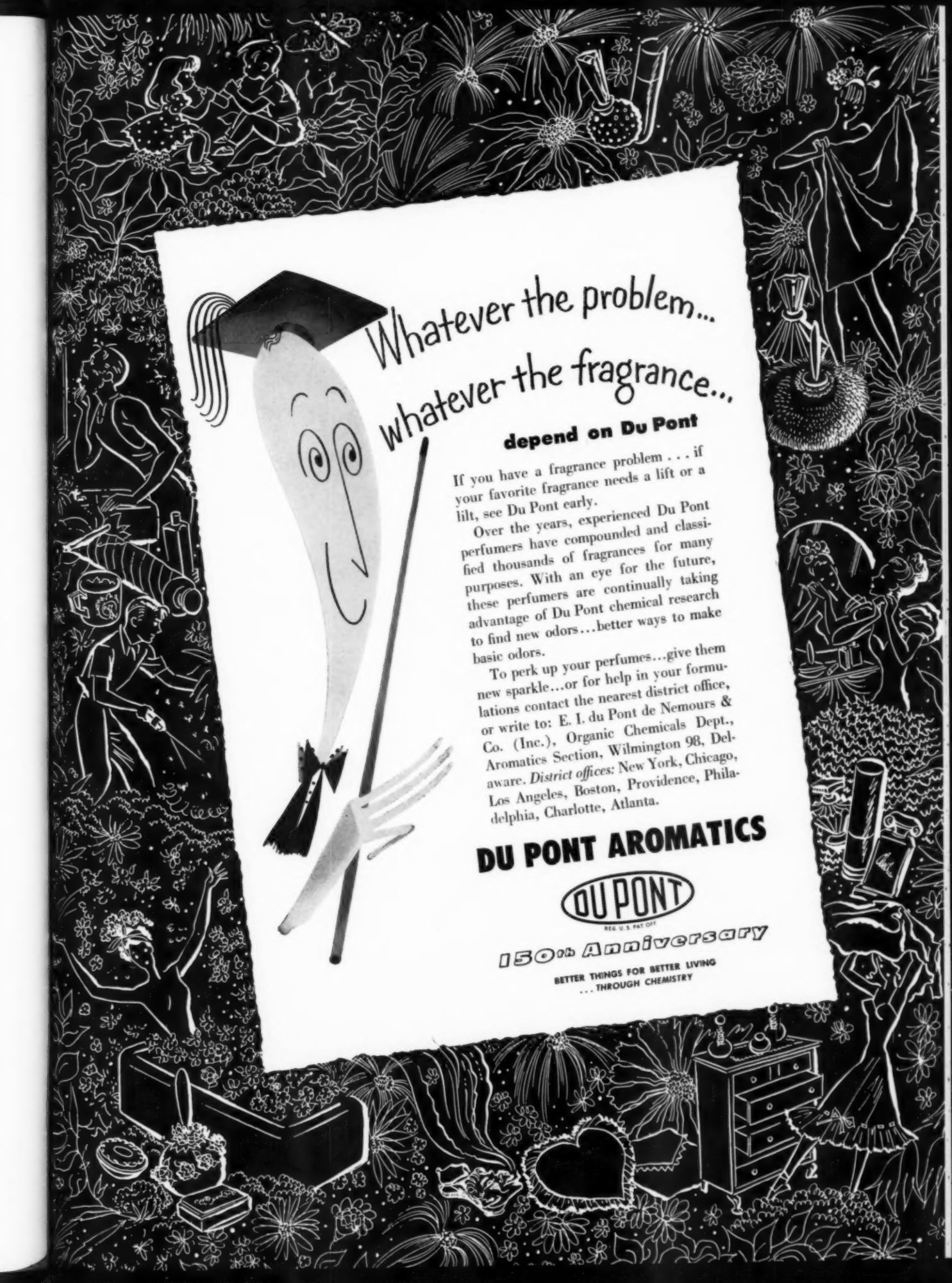
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Foremost American Producer

Mallinckrodt, one of the first American producers of pharmaceutical grades of magnesium trisilicate, began manufacturing this valuable antacid in 1937 and is today among the foremost domestic producers.

Dependably Uniform

Of special value to pharmaceutical manufacturers is the high degree of lot-to-lot uniformity of Mallinckrodt magnesium trisilicate, not only in chemical composition but also in moisture content, particle size distribution, and bulk. Mallinckrodt magnesium trisilicate fully meets U.S.P. requirements.

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To fit both tableting and suspension needs Mallinckrodt magnesium trisilicate is supplied in the following forms:

Magnesium Trisilicate U.S.P. Powder
Magnesium Trisilicate U.S.P. Bulky
Magnesium Trisilicate U.S.P. Super Bulky

Important Properties

Important Properties—Typical Values

	Powder	Bulky	Super Bulky
Bulk—Approx. fl. oz./lb. . . .	45	75	130
Approx. Particle Size Distribution*			
less than 5 microns	15%	50%	65%
5-10 microns	10%	30%	15%
10-20 microns	35%	10%	15%
20-40 microns	40%	10%	5%
*Determined by sedimentation methods.			
Adsorptive power— mg. methylene blue/gram . . .	not less than 100	not less than 200	about 150
Acid consuming capacity— cc. N/10 HCl/gram	140-160	140-160	140-160

Companion Products

For alkaline mixtures containing magnesium trisilicate, Mallinckrodt also supplies top-quality companion products such as Magnesium Carbonate U.S.P., Calcium Carbonate U.S.P. and Bismuth Subcarbonate U.S.P.

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Drug Trade Conference

In a discussion of substitution on prescriptions at the annual meeting of the National Drug Trade Conference, held in New York December 2, the desire for a definition of just what constituted "substitution" was expressed by a delegate representing the retail branch of the drug industry. Discussion revealed that there appeared to be no provisions in the Federal Food, Drug, and Cosmetic Act, or the state acts, which could be enforced to control substitution. State laws generally cover substitution where the product substituted is different from that called for, and not just another brand or make. The question of substituting with products which are made to imitate the distinctive color, shape, and other distinguishing marks of original products was believed to be one for court action against the maker of these products. Such products are made and bought by some retailers merely as a means of illegitimate profits, it was said.

One spokesman for the retail branch of the industry said:

"Pharmaceutical imitation is just as much imitation as brand imitation. However, if a manufacturer brings out an original product and a number of other manufacturers then bring out the same product at the same price as the originator, that is not imitation, that is competition. But if a manufacturer brings out this same product at a lower price, that is imitation. It seems that the question of whether or not a product is an imitation depends on the price."

Discussion regarding fair trade brought out a difference of opinion regarding the question of whether or not manufacturers should attempt to obtain a maximum number of signers of contracts in each state, or if they should be content with only one or a few. The viewpoint was expressed by an attorney representing manufacturers that there was no need to have a large number of contracts as this fact would make no difference in a court of law. On the other hand, those representing the distributive branches of the drug industry expressed the belief that a large number of contracts would have real effect when legislative questions regarding fair trade come up.

The question of whether a large number of manufacturers should sue a flagrant price-cutter who was openly defying the McGuire Act, also brought a difference of opinion with the manufacturers' viewpoint given as it is better to wait until a particular case is adjudicated, rather than confuse the situation with a number of cases. Also it was thought that the matter of one or two cases being skillfully tried was far better than a large number of cases, some of which might not be so skillfully tried resulting, perhaps in adverse decisions. Then again the manufacturers feel that it is not good public policy for a large number of manufacturers to bring suit against one retailer who might then appear as the friend of the people who is being crushed by large interests.

However, the distributive branches of the industry wanted to know what was going to happen if the one or two cases were in the courts for two years or more, and during this time these price-cutters continued to disregard the fair trade prices on all other items except the products of the one or two manufacturers who had obtained injunctions and were following these injunctions through the various courts. Such price-cutting would spread throughout the areas in which these price-cutters are located and the very large majority of the products of the industry would be involved.

Carson P. Frailey was reelected president of the Conference; Dr. Frederick J. Cullen was reelected vice-president; and Ray C. Schlotterer was reelected secretary.

DCAT to Extend Bulletin Service

The Drug, Chemical and Allied Trades Section of the New York Board of Trade has announced plans to extend service to its members mainly by improvement of its bulletin service. Starting next year the bulletin will be issued fortnightly in an attractive form. It will be printed by offset, and will be in two colors. On the front cover will appear the initials of the Section, DCAT, but these will appear as initials in the title of the bulletin—Digest of Current Activities and Trends. The bulletin will be under the direction of a committee headed by F. M. Schemmer, of Ruthrauff & Ryan as chairman, and George McMillan, of Bristol-Myers Com-

pany, as vice-chairman. Other members of this committee will be representatives of the various trade publications which are members of the Drug and Chemical Section.

The bulletin will contain in abbreviated form news of interest to all the various interests who make up this section. Personals will not be included. News of the activities of the many trade associations represented by the section membership will be given. Also complete coverage of the Washington news affecting the entire membership will be furnished through the Section's Washington representative, Carson Gray Frailey. An additional feature will be announcements of articles or features of interest to any segment of the Section membership which have been published, or will be published, in any of the trade publications which are members of the Section. The idea of this is that many members of the Section do not have the opportunity to scan all the publications which might contain articles of interest to them, and the bulletin will serve to acquaint them with fact that articles which they would like to read are, or have been, published.

FDA Appoints Consumer Consultants

Sixteen women have been appointed to serve as consumer consultants to the District Offices of the Food and Drug Administration, according to Commissioner Charles W. Crawford, head of the agency. Mr. Crawford said that the consultants would fill a long-felt need on the part of FDA to establish closer contact with the buying public. The Administration's decision to launch the consumer consultant program is based in part on FDA's experience in solving problems incident to establishing food standards, said Commissioner Crawford, who added that in past years consumer groups were of real service in connection with these problems, although there had been no formal arrangement for obtaining their aid.

According to Mr. Crawford, the women appointed differ widely in educational background, social and civic affiliations, but all were chosen from the viewpoint of obtaining the views of the average purchaser of the products which come within the purview of the regulatory laws which the FDA is charged to administer. Many of the appointees are married women with several children; a few are single women; all are homemakers. Some hold other important assignments in the educational field; others are homemakers who have wide responsibilities in women's organizations. Some are trained in home economics—others have only practical experience in this field.

"The over-all purpose of the program is to direct our work more responsively to consumer needs," said Mr. Crawford. He added that in making the appointments the FDA sought women who had broad knowledge of consumer habits, expectations, and preferences in the purchase of food and drugs. He said: "We wanted persons who knew how the ordinary consumer approaches the purchase of a particular food, what she expects, what she considers important, what information on the label would be of value to her, and why she thinks it would be of value."

Names of the consultants are: Mrs. C. R. Breden, Chicago; Mrs. Cornelia Christopher, Philadelphia; Mrs. Myrtle G. Correll, Kansas City; Mrs. Ray Crum, Seattle; Mrs. Horace French, Buffalo; Mrs. Willard Geddes, Denver; Mrs. Philip J. Hornung, New Orleans; Mrs. Dennis E. Jackson, Cincinnati; Mrs. Loretta Johnson, St. Louis; Miss Eleanor Krout, New York; Miss Gretchen McMullen, Boston; Mrs. John W. Miller, Cincinnati; Mrs. Emil Mrak, San Francisco; Mrs. Elsie Russell, Los Angeles; Mrs. Roy D. Whitlock, Baltimore.

Cancer Research Award to Penick

The award of a grant of $20,000 to the Research Laboratories of S. B. Penick & Company has been announced by Dr. Cornelius P. Rhoads, director of the Memorial Center for Cancer and Allied Diseases and of the Sloan-Kettering Institute for Cancer Research. The grant covers a one-year project in the production of derivatives of certain botanical drugs for study in the cancer-screening program of the Institute. An unusual and interesting part of the grant is that a portion of the funds is segregated to defray the costs of the procurement in various parts of the world of botanicals that are not now commercially available. This is a little known feature of S. B. Penick & Company's function, for which the company has unusual facilities. The balance of the fund will be used for the isolation and purification of active principles of botanicals.

Commenting on the grant, Dr. W. G. Bywater, vice-president of S. B. Penick & Company, said: "This is an unusual arrangement for us to make, for normally we are in the position of extending grants to universities and institutions, and it is a novel position for us to be the recipient rather than a donor. The grant recognizes the unique position of S. B. Penick & Company in the field of botanical products. The opportunity of participating in the great fight against cancer is a privilege."

Vitamins Are Drugs in Minnesota

Vitamins are drugs in the State of Minnesota, according to a ruling by the Supreme Court of that state. The Court ruled that pure and concentrated vitamins, and natural or synthetic combinations, carried in an excipient, solid or liquid form, and offered for sale as tablets, capsules or in liquid form, are drugs and are subject to the state's pharmacy law. According to the ruling, vitamins are not excepted from the statute as common household preparations sold exclusively for non-medicinal purposes, nor are they excepted as non-habit forming, harmless, proprietary medicines. Therefore they may not be offered for sale in grocery stores.

FTC Again Uses Injunction Powers

The Federal Trade Commission is now using its injunction powers with respect to drug advertising quite frequently. Last month the Commission obtained a preliminary injunction against National Health Aids, Baltimore, restraining the company from disseminating certain advertising matter in connection with a vitamin and mineral preparation known as NHA Complex.

Claims prohibited under the injunction are that the

product will make and keep one well, that it is effective treatment for, or will cure, arthritis, rheumatism, neuralgia, sciatica, lumbago, gout, coronary thrombosis, bad bones, bad teeth, malfunctioning glands, infected tonsils, infected appendix, gall stones, overweight; that it is of value in diseases, disorders, and symptoms such as neuritis, underweight, constipation, indigestion, lack of energy, lack of vitality, lack of ambition, or inability to sleep, except when these disorders are due solely to mild vitamin and mineral deficiencies.

Generic Name for Terramycin

Terramycin has been given the generic name, oxytetracycline, as the result of the recent discovery of its chemical structure, according to Chas. Pfizer & Co. The new name is descriptive of the chemical nature of the antibiotic with its high oxygen content, four-ring nucleus, and attached dimethyl amino group. The term oxytetracycline has been accepted by the World Health Organization Subcommittee on Non-proprietary Names and by the Council on Pharmacy and Chemistry of the American Medical Association. It has also been submitted to the U.S. Pharmacopoeia and other medical and pharmaceutical groups.

Due to the exclusive patent position of Pfizer, the name Terramycin has served until now not only to designate the product, but also to indicate its production by Pfizer. Terramycin is a registered trade-mark of Pfizer in more than 30 countries. Trade-mark applications are pending in the United States and 37 other countries. It is anticipated that a period of several months will elapse before this policy can be reflected in the labeling and advertising of Terramycin.

Pure ACTH Isolated

Pure adrenocorticotropic hormone (ACTH) has been isolated by a team of half a dozen chemists of the Armour Laboratories division of Armour and Company, who have been intensively engaged for more than three years in solving this problem. Pure ACTH has been found to be a white powder, soluble in water. It is a protein with a molecular weight of about 3,500, much smaller than originally estimated, and it appears to consist essentially of a single chain of amino acids. It has 150 to 200 potency units per milligram. As with most proteins, say the scientists, there is little chance of synthesizing it. Because its therapeutic effects are exactly the same as Armour's currently marketed ACTH, the pure product will not be put on the market, but will be available for research.

FTC Cites Jeris Hair Tonic

Misleading and false advertising of Jeris Antiseptic Hair Tonic and Fore, a shaving lotion, is charged by the Federal Trade Commission in an amended complaint against Ar. Winarick Inc., New York. Alleged false representations are that Jeris Antiseptic Hair Tonic (1) is a cure for dandruff, (2) will relieve itchy scalp, (3) will prevent excessive falling of hair, (4) used with massage, will stimulate blood flow in the scalp to the extent that hair roots will be nourished and (5) will promote or cause healthy hair growth or will result in a healthy scalp. In promoting the sale of Jeris Tonic, Winarick is charged to have also misrepresented that bottles of Fore are given without cost, free or as an unconditional gift, when they are furnished only in connection with the purchase of the hair tonic.

Penicillin Price at Bottom

The price of penicillin really reached bottom last month when a Government bid was awarded for 800,000 vials containing 500 units of penicillin each at a price of 3.5 cents per vial. Equally interesting is the fact that the firm receiving the award is not a maker of penicillin.

31 Oldest Drug Houses

The list of Oldest Drug Houses has been increased by one more and now stands at a total of 31 establishments from the earliest in this country to the year 1876. This compares with an original list of eight such houses originally published in our December 1949 issue, and taken from the Reed & Carnrick Quarterly.

The latest addition to the list is the Valentine Company, Richmond, Va. which was established in 1871 as Mann S. Valentine Company, and was incorporated in 1891 as Valentine's Meat-Juice Company, and at a later date became known by the shortened title of Valentine Company, Inc. The company was founded to produce the original product, Valentine's Meat Juice, which was used entirely on physicians' prescription or recommendation and all promotion has been directly to the physician.

The list of the 31 oldest drug houses follows:

Caswell-Massey Co. Ltd.	1752
Schieffelin & Company	1781
Lanman & Kemp-Barclay & Co.	1808
The Tilden Company	1824
S.S.S. Company	1826
The Wm. S. Merrell Company	1828
McKesson & Robbins	1833
Strong Cobb & Co.	1833
Boericke & Tafel	1835
Otis Clapp & Son	1840
Smith, Kline & French	1841
Carroll Dunham Smith Pharmacal Co.	1844
Sharp & Dohme	1845
Solon Palmer	1847
E. R. Squibb & Sons	1848
Chicago Pharmacal Company	1855
Hance Bros. & White Co.	1855
William R. Warner & Co.	1856
Reed & Carnrick	1860
Wyeth, Inc.	1860
The Burrough Bros. Mfg. Co.	1863
Buffiington's	1865
Parke, Davis & Company	1866
Borcherdt Malt Extract Company	1868
Lloyd Brothers, Inc.	1870
Valentine Company	1871
Henry K. Wampole & Co.	1872
Chilcott Laboratories	1875
Lydia E. Pinkham Medicine Company	1875
The Arlington Chemical Company	1876
Eli Lilly & Company	1876

Doctor-Druggist-Mfr. Tie-Up

As the result of an investigation by New York State Attorney General Nathaniel L. Goldstein following a series of articles appearing in the New York World-Telegram, five pharmaceutical manufacturers manufacturing corporations—four in New York State, and one in Connecticut—signed consent papers in the New York Supreme Court November 20, by which they agreed to dissolve their corporations and get out of the drug business. The names of these five companies are: Baxter, Saunders & Co., Bridgeport, Conn.; Steel Pharmaceutical Company, Jackson Heights, Queens, N.Y.; Pirson Drugs Corporation, New York; Chester Laboratories, Beacon, N.Y.; Talveron Chemical Company, Brooklyn, N.Y.

A sixth company, Colin Pharmaceutical Company, Long Island City, Queens, N.Y., did not consent to dissolution and court action was taken against them with trial set for early this month. A seventh company, Marvin R. Thompson, Inc., Stanford, Conn., also agreed to a consent decree against it. This decree does not force the company to retire from business, but restrains it from ever again selling stock in the corporation to doctors or druggists of New York State.

The investigation was launched last Spring because the newspaper article drew attention to the fact that various pharmaceutical manufacturing firms had been formed on a basis of issuing stock to doctors and druggists in order to get them to prescribe and push their products. In the case of the first five firms which signed consent decrees, 80 per cent of the medical stockholders of those corporations signed agreements that they would never again invest in any drug corporation. Similar pledges are being sought from the remaining 20 per cent. In the case of the Colin Pharmaceutical Company, which refused to sign a consent decree, 342 doctors and 230 druggists who are stockholders in Colin, are being investigated for possible disciplinary action by the State Department of Education.

According to Attorney General Goldstein, the five companies which agreed to dissolution "were conducting their businesses in a manner inimical to the public interest."

"I found violations of the Martin Act, which deals with the fraudulent sale of securities; violations of the Donnelly Act, which concerns the unlawful restraint of trade, and in certain cases, questionable or unethical conduct on the part of doctor and druggist stockholders," asserted Mr. Goldstein. He said that he undertook the investigation because "fraud, conspiracy and unethical conduct practiced on unwary patients by a comparatively few outfits and individuals could not be condoned." A doctor or a druggist, he stated, should be above suspicion. He said that in most cases "doctor stockholders were simply dupes used by the corporations to reap a harvest based upon the principles of profits over prestige."

Marvin R. Thompson, president and director of research of Marvin R. Thompson, Inc., has addressed a letter to service wholesalers, service retailers, stockholders and all field representatives of his company in which he states that in the investigation "an old and otherwise forgotten statute of the State of New York was uncovered under the Department of Education. Among other things, this statute actually does in effect prohibit physicians, pharmacists, dentists, etc., from owning stock or otherwise participating in the earnings of pharmaceutical manufacturers, appliances, etc., including drug wholesalers, retailers, hospital supply manufacturers or their distributors, etc. *The constitutionality of such a statute may well be challenged.* In the opinion of many individuals, including learned members of the legal profession, this statute is sufficiently discriminatory to seriously conflict with the rights of American citizens . . . you can readily understand the position in which you are placed with respect to ownership participation in company earnings, operating in the field which you know best, realizing that the securities of many of the largest drug firms are available through the New York Stock Exchange and Curb Exchange, if not directly. Responsible financial advisors usually counsel investors to give consideration to companies operating in the field in which the investor is most expert. . . .

"MRT policies, principles and modus operandi remain unchanged, being tacitly approved by the Attorney General's office, and will remain unchanged until we find a way of improvement—except that our company securities will henceforth not be available to practicing physicians or pharmacists in New York until the New York State statute is repealed or suitably modified to provide for penalizing the few exceptions who may be truly guilty, without penalizing those who are responsible for helping to build the standards of the Healing Arts Professions to the highest in the world."

AMA Committee on Research Neglected

The drug industry missed the boat through its neglect of the cooperative research plan offered by the Committee on Research of the AMA Council on Pharmacy and Chemistry, Dr. Paul Wermer, secretary of this committee recently told the Midwest Pharmaceutical Advertising Club. He said that during his first year with the Committee on Research there was not one request for contract investigation, while four investigations were carried out in the second year.

Ignorance of the activities of this committee is responsible for this neglect of its facilities, according to Dr. Wermer, who upon questioning industry representatives found that:

(1) Many thought that the services of the committee were available only to those interested in large scale operations;

(2) Some feared that the committee was meant to displace regular research staffs;

(3) Others thought the committee existed only for the benefit of companies too small to be able to afford their own research organizations.

The fallacy of these assumptions became apparent as Dr. Wermer explained the function of the committee. Action is initiated by a concern which wants evaluation of (a) a legitimate new drug, (b) a new use for an old drug, or (c) a drug which is under attack. All pharmacological and research data are submitted to the committee in the form of a bulletin. Agreement is reached between the company and the committee on an investigator and the nature of the investigation to be made. An investigation plan, estimate of expenses involved (and this is the only cost to the company), and a tenta-

tive date for completion of the investigation are submitted by the investigator. On completion of the investigation results are submitted to the company before publication. The firm can then request a new investigation by another investigator if he feels that the first has been unsatisfactory. Final results cannot be suppressed, however. The findings, when considered conclusive, will be published in the Council on Pharmacy and Chemistry columns of the AMA Journal. This fact emphasizes the importance of careful selection of products for submission to the committee.

Stoppette Stipulation

Advertising claims for Stopette Spray Deodorant are the subject of a stipulation executed by the Federal Trade Commission with Jules Montenier, Inc., Chicago. Although Montenier agrees to stop claiming that the product stops underarm odor or keeps the underarm free of moisture, and that the product does not irritate the skin, and that the product is safe,—the company is not prohibited from claiming that the product stops underarm odor or keeps underarm free of moisture when used daily or when used as directed, or when it is otherwise clearly disclosed that the product does not have a permanent effect. Nor is the company prohibited from claiming that the product is non-irritating to all skins except abnormally susceptible skins, and claiming that the product is safe for all skins except abnormally susceptible skins.

Stops Imitator

An injunction was recently issued by the U.S. District Court, Southern District of New York, against Bonded Laboratories, Inc., Hans Lowey and David Schwartz, the latter trading as the Bryant Pharmaceutical Company, enjoining them from having manufactured or offering for sale tablets which might be confused with Pabalate, an arthritic prescription specialty of the A. H. Robins Co., Richmond, Va. As part of the settlement reached at the time the order was issued, the Bryant company agreed to cease and desist from manufacture and/or sale of their imitations of three other Robins specialties, according to E. F. Heffner, Jr., vice-president of Robins. Mr. Heffner hailed issuance of the order by Federal Judge Edward Weinfeld as "an encouraging step in the right direction, that is, from mere moral disapproval to definite legal action to halt a dangerous practice."

Federal Trade Commissions Future

James M. Mead, chairman of the Federal Trade Commission, has announced his intention of resigning from the Commission at some time before the inauguration of General Eisenhower. Commissioner John Carson's term expired in September of this year, but he has not been reappointed and therefore will only serve until a successor has been appointed and approved by the Senate. General Eisenhower will therefore have the opportunity to appoint two new Commissioners immediately upon taking office. These two appointees, together with Commissioner Lowell Mason will give the majority of the five Commissioners to the Republicans and General Eisenhower will therefore select a chairman from the three Republican members. Mr. Mason's term expires in September 1956, and the terms of the other two members, Commissioner Albert Carretta and Commissioner Stephen Spingarn, expire in September 1954, and September 1953, respectively.

Dunn Honored by GMA

Charles Wesley Dunn was honored recently by the Grocery Manufacturers of America, Inc., on the occasion of his fortieth anniversary as its first and only general counsel. A beautifully embellished award was presented to Mr. Dunn by Austin S. Ingleheart, president of General Foods, before an audience of over 1,000 executives of the food industry.

Veterinary Sales Volume

The retail sales volume for veterinary products amounted to $135,977,000 in 1951, of which $2,065,000 was for instruments. The breakdown shows $66,645,000 for biologics, $36,522,000 for livestock products, and $30,745,000 for poultry products. In the livestock and poultry products, sales in the ethical field were $15,808,000, or 23.5 per cent; and proprietary sales were $51,459,000, or 76.5 per cent.

Aureomycin Chemical Structure Revealed

Lederle Laboratories has announced discovery of the chemical structure of its antibiotic, aureomycin. The Lederle research team explains that the most gratifying feature of the structure of aureomycin is its high oxygen content throughout the molecule. This not only aids in increasing the solubility of the drug in body fluids but also makes its possible for the body to oxidize the compound, thus preventing the possibility of chronic toxicities or poisoning.

As a result of the discovery of the structure of the aureomycin molecule it is also claimed that the reason why the drug is effective in all parts of the body in such a short time can now be explained. The drug is what the chemists call amphoteric—meaning it will combine with both acid and alkaline substances to form salts of these compounds. For a drug to be carried from a patient's stomach to an infection in the lungs, for example, it must go by means of the body fluids. To do this, the drug has to be soluble in the body fluids. And to be soluble it must form some sort of a salt. Thus the ability of aureomycin to form salts with both acid and alkaline substances plays an important role in its solubility and consequently in its rapid transportation to the infected areas of the body.

The research team pointed out that while a practical synthesis of the drug is highly improbable, synthesis of model compounds for biological studies is now possible.

Plantings of Mentha Arvensis in State of Sao Paulo, Brazil.

PHOTOS COURTESY FRITZSCHE BROTHERS

Menthol at the Crossroads

by Frank Child III

Menthol is this month selling at $5.40 a pound; two years ago it was $15. Not since 1940 has it been as low for any length of time; yet, few consumers have made any important purchases. Although the use of menthol has increased over the past two or three decades, world demand for the natural product has failed to gain accordingly, while synthetic menthol is more widely used today than ever before. Moreover, Brazil, chief source of the natural, since the end of the war, may soon be faced with stiff competition from the Far East.

These accumulative developments which have been slowly building up through the years, will most certainly affect the quivering status of this vacillatory and tricky commodity. While it is impossible to foretell the course menthol will follow in the decade ahead, it is, nonetheless, quite possible to evaluate these happenings and define their importance. Here is the market as it stands today.

Those manufacturers who depend heavily on menthol in the preparation of important products still have fairly large inventories on hand, left over from the Spring of 1950 when the Korean War broke out. At that time, they all rushed in to build up their stocks as rapidly as possible, fearful of a prolonged war-time economy and all its concomitant shortages and hardships. They had been through it ten years before.

Repercussions were immediate. Brazil, chief supplier to the Western hemisphere at this time, boosted the menthol price to $15, capitalizing on the artificial demand. Many months later, even after the U.S. buying spree had terminated, that country was able to sell the commodity to European areas at almost any price. This prolonged the $15-level until early in 1951. By June of that year it had dropped to $11.50. Six months later, as more consumers reached the saturation point, or had no money to spare, it was down to $8.65; by June, 1952, it was $6. This month, December, the price of Brazilian menthol is $5.40.

Producers of synthetic menthol declare they were also responsible, in a small way, for this decline of the natural product. Two years ago, they point out, citronella oil, one source of the synthetic material, was about $2.50. This high level of the raw material reduced the production to a minimum. Later on, when the citronella price dropped to less than a dollar, sufficient quantities of the synthetic menthol again became available, say the producers, and helped force the price of the natural product down.

Observers report that the Brazilians, having been spoiled by their recent menthol successes, are now growing careless. With the price of menthol so low, these producers seem to be neglecting their peppermint plants, thereby causing inferior yields. In some cases they are not too particular about the cleanliness of the menthol they ship.

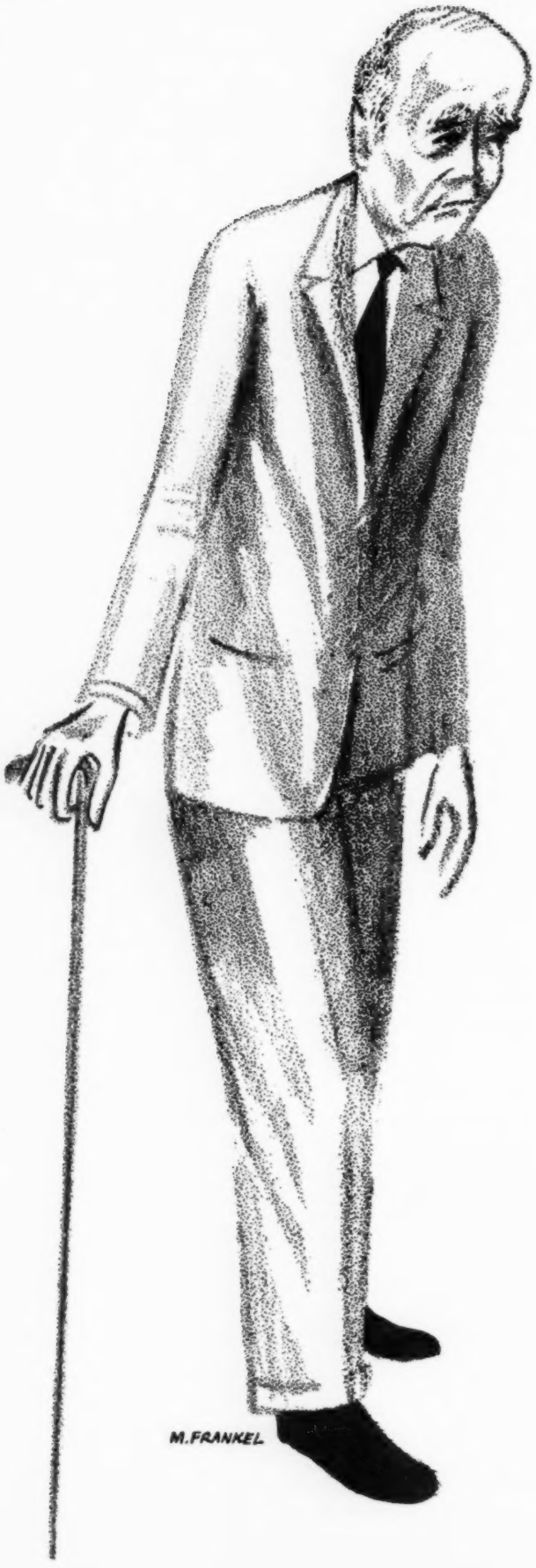
Japan, once the undisputed world leader, has rebuilt its menthol industry since the war and is now becoming a formidable contender for the world market. Although the Brazilian and Japanese menthol is derived from the same plant, *Mentha Arvensis*, the Japanese is superior because of the extreme care and time devoted to its preparation. This plant is also the most economical source and contains from 80 to as much as 90 per cent natural menthol.

The American peppermint, *Mentha Piperita*, grown in the West and Midwest, contains only about 50 to 55 per cent and is very unsatisfactory as a menthol source.

At the present time, Japanese menthol is selling at $6.95 a pound, or $1.55 more than the South American variety. American consumers prize the Japanese material and prefer it over the Brazilian, but most of them will not turn to it until the price differential drops to a dollar or less. Nor is Japan willing to lower its price that much right now. A large portion of that island's menthol crop is directed to Europe, India, and neighboring areas, with the remainder being consumed in Japan itself. For the present, there is no need for that country to expand its marketing area.

(Continued on page 844)

Sampling of Mint Oils in Hokkaido, Japan.

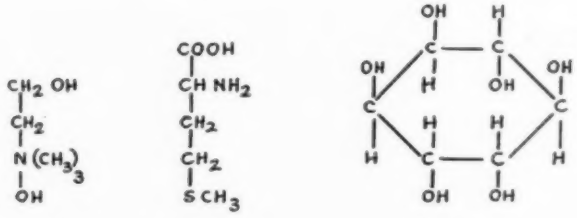


The Lipotropic Agents

by Dr. J. L. Boyle

The dietary effects of choline, methionine and inositol on the metabolic transportation of fats are called lipotropic effects. The term was first used in 1935 by Best and Ridout,[1] to describe the decrease in the rate of deposition and increase in the rate of removal of fat, from the liver, that follows on the administration of choline. Since then, it has been extended to include the related clinical effects of choline and its precursors in the body, such as the prevention of renal lesions and cirrhosis in animals. The lipotropic effect usually appears to be intimately related to the existence in a substance of a methyl group linked through a nitrogen or sulphur atom to the rest of the molecule. It may be said that this radical has a vitamin-like role in the diet.

The chemical formula of the three main lipotropic substances are given below.



CHOLINE METHIONINE INOSITOL

Choline is one of the group of compounds that make up the Vitamin B complex. It is a strongly alkaline, syrupy liquid which forms stable salts with acids. There are three distinct biological functions that it performs. Its acetic acid ester, acetylcholine, is the chemical mediator in the transmission of impulses

through the parasympathetic nervous system; it is a major constituent in the lecithin of egg yolk, for this phospholipid is the choline ester of distearyl-glycerol-phosphoric acid; it supplies labile methyl groups for metabolic reactions such as the conversion of homocysteine to methionine. It is the third function, the activity of the labile methyl groups, which accounts for its lipotropic properties.

From the results of dietetic experiments, it appears that the body treats a methyl group that is linked through nitrogen or sulfur, differently from one that is connected to the rest of the molecule through carbon. This is shown[2] by administering choline in a form which contains isotopic hydrogen (deuterium) in its methyl groups; the isotope is subsequently found in the methionine and creatinine in the tissues. The former has its methyl group linked to sulfur, the latter to nitrogen and so it appears that all methyl groups so linked are "pooled" within the body and molecules of choline methionine and creatinine each draw from this pool. This leads to the belief that there is a metabolic interdependence between these substances which accounts for some of their clinical effects and limitations. In the case of choline, it appears that the body is able to synthesize all but one portion of the molecule, namely the methyl groups, and provided an outside source of them is available, for example, from methionine, choline can be synthesized in sufficient quantity for the body's needs. If not, then choline or a source of methyl groups becomes an essential food factor, that is to say a vitamin. Some experiments of du Vigneud[3] suggest that the sulfur containing amino acid homocysteine is changed into methionine by transference of a methyl group from choline. It may be that this reaction is reversible and that methionine can act as a source of methyl groups to a choline precursor.

The labile nature of the methyl groups in these metabolic reactions is puzzling, because they are comparatively stable under ordinary in vitro conditions. This has led to the surmise that choline and methionine do not give up their methyl groups directly but first pass into some intermediate form from which the alkyl groups are released; for example, the existence has been postulated of a choline derivative having the hydroxyl replaced by a more electro-negative group, which would reduce the strength of the bond between the nitrogen atom and the methyl groups.

Methionine is an essential amino-acid, that is, the body is not able to synthesize it fast enough to satisfy metabolic requirements. The term "essential" is therefore relative because it depends on the body's requirements at a particular time. Methionine was discovered in 1922 by Mueller during growth-promoting experiments on bacteria. Like other naturally occurring amino-acids, it is amphoteric and optically active; unlike the others, it contains a methyl group linked through sulfur to the rest of the molecule. The main biological sources are egg albumin, which contains 5.2 per cent and casein, which contains 3.5 per cent of methionine.

There are three ways in which methionine contributes to living processes; a certain minimal quantity is necessary for growth; it provides the organically bound sulfur needed for the production of sulfur-containing metabolites, such as cystine; the labile methyl group in the molecule confers on it lipotropic properties. Only with reference to the third of these functions, is it correct to say that methionine and choline supplement one another. Dietary choline has no influence on the growth promotion or sulfur metabolism aspects of methionine's action and therefore cannot replace it entirely in the diet; only that portion of the amino acid intake which is concerned with lipotropic phenomena is replaceable by choline. Similarly, methionine supplements in the diet are not available for lipotropic purposes until the body's need for it under the first and second headings have been met. This limitation, due to poly-functionality, applies also to other lipotropic substances and makes more difficult the assessment of their clinical effects.

Inositol is a ring compound related to cyclohexane and having the same empirical formula as glucose, which it resembles in possessing a sweet taste. It is found in a combined form in both animals and plants—usually as a phospholipid. Chemically it can occur in optically active forms but biologically it is found in its inactive, meso form. Like choline it is one of the group of compounds called the vitamin B complex and has lipotropic properties. It differs from the other lipotropic factors, choline and methionine, in having no labile methyl groups and the mechanism of its action is not known. It has been suggested that it may be a secondary nutrient, that is, it may stimulate the microbial population of the body to synthesize some other essential nutrient. The close structural similarity between this essential metabolite and the potent insecticide Gammexane, in which the hydroxyl groups of inositol have been replaced by chlorine atoms, is interesting and it has been shown that, in certain cases, inositol can reverse the insecticidal action of Gammexane. But no elucidation of its action has come out of this consideration.

It has been found[4] by experiments on animals that the relative proportions and the absolute amounts of protein and fat in the diet can have a profound effect on the function and structure of the liver. If excessive quantities of fat are eaten, there is a gradually increasing fatty infiltration of the liver leading to fibrosis and culminating in portal cirrhosis. If the proportion of protein in the diet is greatly reduced, there develops a massive type of necrosis which may lead to death. Another effect of a very low protein diet, is a reduction in the resistance to liver poisons, presumably due to the accumulation of toxic agents normally rendered harmless by an adequate dietary intake of proteins. It is principally against the first effect, namely, the accumulation of fat in the liver, that lipotropic therapy is directed and it has been shown that it can be prevented by the addition of choline to the diet. Other

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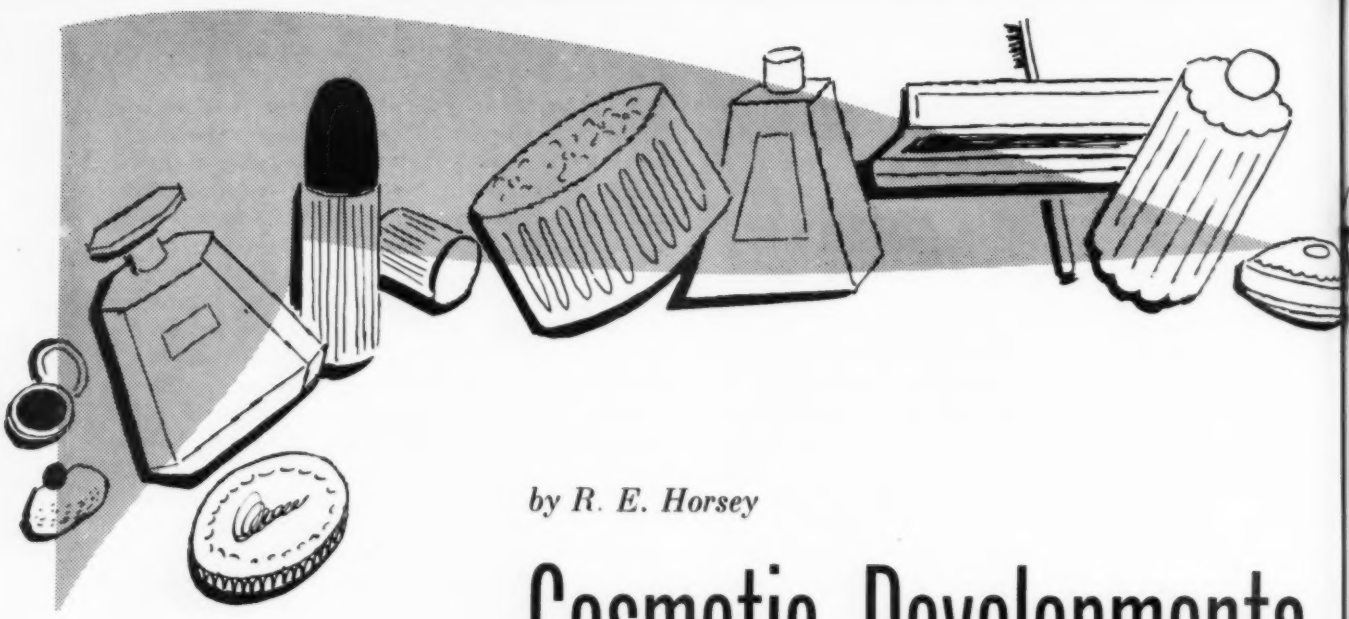


by R. E. Horsey

Cosmetic Developments a

To properly evaluate developments and future markets of any industry, it is worthwhile to consider the past performance. From the figures estimated by the Toilet Goods Association, we find in 1914 retail sales of cosmetics and toiletries to be approximately $40,000,000. In 1929 this volume had increased to $378,000,000, dropped to $290,000,000 in 1932 and has risen since that time to an unprecedented high of $913,000,000 in 1951. Unfortunately, our Federal statisticians and economists change their basis periodically which makes it almost impossible to correct these figures on the purchasing value of the dollar. But assuming an inflation of 300 per cent since 1914, which I'm sure is liberal, it can be readily seen there has been a 750 per cent increase in retail sales. During the period 1910 to 1950 the U. S. population increased from 93,000,000 to 152,000,000. Therefore, it is quite evident the increased sale of cosmetics and toiletries has been due to wider and increased consumption by the American public and not just population increase. This, of course, includes both men and women users though many of the male species do not like their after-shave lotion, hair dress and other similar products to be considered cosmetics.

We all are aware the cosmetic industry is one of the oldest as far as cultural accomplishments, but even as late as the 1890's and early 1900's it was a small industry. However, the ground work was laid in those early years. Just after World War I, the so-called "Age of Flaming Youth," there was a radical change in cosmetic usage, and we soon found make-up being used by the teen-agers and older women. Since that time, except for those ugly depression years, the growth has continued to be phenomenal. Much of this growth is claimed to have occurred without too much effort on the part of the industry and some of the acknowledged reasons for the growth are:

1. The general public's increased buying power. It has been found that for every ten-billion-dollar increase in indisposable income, cosmetic sales increase 24 million dollars.

2. Recruiting of women in industry which has continued after the war years. During 1940 and 1944 nearly a million women left rural farm areas for large cities.

3. Appreciation of the morale-building power of cosmetics.

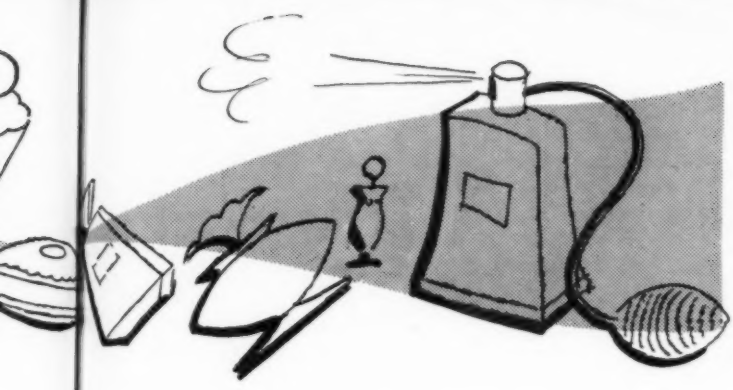
4. Possibly the feminine competition for the existing males.

5. The increased usage by teen-agers and masculine groups.

In terms of various cosmetic categories, there have not been any new ones in the past thirty years. However, there has been a vast shift within these categories. The largest increases have been found in hair preparations, deodorants, shaving preparations, perfumes and toilet waters. Toilet soap has remained practically constant indicating no increase in users other than due to population increase. The average woman of 15 years of age and over spends two and one-half times as much for cosmetics today as she did 15 years ago. The average man spends four times as much today as he spent ten years ago.

In the time allotted, it would be impossible to cover

*Presented before Association of Consulting Chemists and Chemical Engineers, Oct. 28, 1952.



s and Markets

all the new developments in cosmetics, and I will restrict myself to those which to me seem to be the most important ones. In general, new developments include both improvements of packaging and product. I do not want to dwell on package improvements as you are all aware of these. However, the over-all general trend in packaging has been to enable women to carry their cosmetics with them. Portable packages must be unbreakable, small and usable. The plastic, polyethylene bottle continues to grow in popularity, because of its unbreakable character and they offer easier application. Aerosol containers also offer easier application.

The formulation of cosmetics today is far more complicated than it was many years ago, which of course could be expected with the introduction of so many new chemicals, plus the active research programs of the cosmetic manufacturers.

I'm sure you're all aware of the newer indelible lipsticks. While some distributors of these sticks might have been over-zealous in their advertising claims as to the degree of permanency, still the fact remains that they offer far more permanency than the older conventional lipstick. The more permanent effect was obtained through the use of new solvents which increased the amount of bromo acid which could be dissolved. Obviously, these solvents did not increase the solubility of all the pigments used in lipsticks and therefore complete permanency is impossible. Unquestionably, women prefer the conventional solid lipstick over liquid lipsticks, but prior to the introduction of non-smearing lipsticks quite some success was had by a liquid one which was based on ethyl cellulose as the film-forming base. As the indelible or non-smearing types appear to be what the public wants, perhaps the cosmetic chemist will develop one having similar properties of the newer interior latice paints which are water applicable, but resistant to water after they are dry.

Perhaps the other outstanding development in make-up is the pancake type powder which seriously changed the sales picture as far as face-powder is concerned. Again, I would like to point out the ease of application and portability of pancake versus face powder. Essentially, pancake is a powder with high covering power containing binder and wetting agents and then pressed into cake form. Earlier ones had to be applied with a moist applicator, but the newer ones can be applied in the same manner as the ordinary compact face powder.

Some fifteen years ago rouge made into a vanishing type cream base was popular, but it had the drawback of drying out and changing in color. More recently, liquid rouge emulsions have appeared on the market. These are stable products and a drop or two when spread gives the proper tinting of the skin.

Practically every year there are introduced on the market new face creams and lotions. Many of these are new in formulation, but not in principle. The most outstanding development is probably the introduction of pure hormones, namely estrogens, in these creams and lotions. Though there has been a good deal of argument on the merit of hormones applied topically, the experimental evidence indicates that the estrogens are capable of allowing the collagen bundles in the skin to hold more water, increase the capillary bed of the skin and the number of mitoses taking place in the living layers of the skin. It is also acknowledged by some of our leading dermatologists that the concentration of estrogens used in these products is not sufficient to manifest systemic action and there was no evidence available to date of any formation of cancer or precanceroses.

As I mentioned earlier, there has been a tremendous increase in the use of deodorants of all types. The formulation of anti-perspirants that had caused practically no deterioration of fabrics was a great impetus to their use. This was first accomplished by use of buffers which reduced the acidity of the chemicals causing the destruction. Later, a basic salt of aluminum chloride, so-called aluminum chlorohydrate was introduced. This chemical acts slower in retarding perspiration, but because of its lower acidity it has less tenderizing action on fabrics than the straight aluminum salts.

Other types of deodorants include those which do not act as inhibitors of perspiration. The older deodorant creams blocked the sweat glands and through the perfume washed the perspiration odor. Today, deodorants are primarily based upon antiseptic agents which inhibit the organisms which attack perspiration and cause the formation of by-products having the

(Continued on page 826)

Sclerosing Solutions

by Milton A. Lesser

It is just about a century ago—following the invention of the hypodermic needle—that the first attempts were made to apply sclerosant treatments. In the following years, various chemical solutions were tested for the purpose of obliterating varicose veins by injections. Interest in this procedure led to further trials of the injection method for treating various other conditions characterized by dilated veins, such as hemorrhoids, varicocele and the like. It was not until about 1917, however, that the injection treatment of varicose veins was placed upon a scientific and permanent basis.[1]

Today treatment by the injection of sclerosing solutions has become a well-established procedure. According to Biegeleisen,[2] an authority in this field, sclerotherapy aims at replacing surgery by a relatively safe procedure which permits the patient to be ambulatory. Stressing that special training is required in these procedures, he describes 24 major indications for the application of sclerotherapy. Actually, however, sclerosing solutions find their chief employment in the injection treatment of varicose veins and hemorrhoids.

The appearance of varicose veins is one of the penalties that man pays for walking erect and the condition has been treated since time immemorial.[3] Varicose veins are described[4] as abnormally lengthened, dilated, sacculated superficial veins that are seen almost exclusively in the lower extremities and lower abdomen. They may be the result of many factors, including degeneration of the valves, the vein walls and the perivascular supportive tissue.[5] These factors are influenced by etiologic considerations such as familial tendency, pressure on the veins, pregnancy, certain occupations, and inflammation.[6]

The usefulness of sclerotherapy as a means of treating varicose veins is indicated in the estimate[7] that not less than 10 per cent of the adult population is affected with this condition. Sclerosing solutions are employed in the treatment of this condition because their irritant properties result in obliteration of the varicose vein. After careful injection of such a solution into the lumen of vein, the sclerosing agent destroys the endothelial lining of the blood vessel and initiates the formation of an adherent clot.[8] However, as stressed by Reckler,[3] the purpose of a sclerosing injection is not solely to coagulate the blood but, more important, to so irritate the endothelial lining of the vessel that the walls will become adherent and obliteration of the lumen will occur.

The use of sclerosing solutions is said to have several advantages over older procedures that employ ligation,

stripping, or excision. The injection treatment is a simple procedure, it is inexpensive and hospitalization is not required.[9] Of course, not all varicose veins are suitable for injections and various means are available to determine the cases amenable to sclerotherapy.[10,11] According to Payne,[12] varicosities below the knee, especially thin-walled veins, respond well to injections. Some workers[13,14] feel that injection treatment for varicose veins is most valuable for the early stages or for minor degrees of varicosity and as an adjuvant to obliterate varices remaining after operation.

As noted by Harvey,[6] treatment of varicose veins by sclerotherapy alone often brings "very gratifying results" that last for varying periods. Unfortunately, the veins almost invariably recanalize and the varicosities return. In Harvey's opinion the most satisfactory treatment is a combination of ligation and injection. This operation is comparatively simple and many cures are obtained through its use. Ulcers on the leg heal rapidly following this procedure. It is particularly effective in laboring men who have varicose veins and sustain injuries that generally heal very slowly. The patients are usually well satisfied and are grateful for the relief provided by the combined method.

Considering the statistical aspect, Hirschman[15] found that when the injection method was used alone in the clinic with which he is associated, there was a noticeable recurrence of varicosities in approximately 65 per cent of the cases treated. When the saphenous ligation and injection methods were used together, recurrences fell to from three to 5 per cent. These findings clearly show the superior results obtainable from a combination of both types of treatment.

Of interest in this connection is Gooel's[7] observation that, although ligation eliminates backflow, lessens symptoms, and reduces the size of varicosities, the final therapeutic result is derived from sclerosis.

There are, however, those[16] who feel that sclerosing solutions have rather limited usefulness in the treatment of varicose veins. Priolean,[17] for example, is of the opinion that the injection of such solutions has no place in the treatment of varicose veins, except perhaps in the obliteration of residual small, unsightly varices. He points out that with injection therapy there is the danger of severe allergic reactions, of thrombophlebitis, of recanalization, and of thrombosis.

Recognizing these dangers, advocates[8,18] of sclerotherapy emphasize that many of these untoward reactions can be avoided by careful selection of patients, pretesting for allergic sensitivity, and by proper injection technics. As remarked by Orbach,[19] "Sclerotherapy has stood the test of time. Properly used, especially postoperatively after vein ligation, it is an effective means of obliterating useless venous space."

Another important factor in the prevention of undesired reactions and poor results is a knowledge of the various contraindications to sclerotherapy. Such treatment of varicose veins is to be avoided in the presence of any impairment of the deep venous system, active or recent phlebitis, systemic diseases such as active tuberculosis, hyperthyroidism, heart disease or tuberculosis, acute infections (including the common cold), prolonged recumbency, and cardiac decompensation.[11,20,21] Although pregnancy is generally listed[22] as a contraindication to sclerotherapy, Mullane[23] has recently reported that most varicose veins can be relieved and controlled during pregnancy by the injection of sclerosing solutions into the lumen of the vein. Of the patients studied, 87 per cent returning for postpartum examination eventually obtained good results by injection alone.

Many of the considerations in varicose vein therapy apply also to the use of sclerosing solutions in the treatment of hemorrhoids. Thus, the purpose of the injection is to produce, by irritation with a chemical sclerosing agent, sufficient fibrosis to shrink the network of dilated blood vessels forming the hemorrhoids, without causing sloughing of tissue.[24] As a rule, three to five injections are needed to obliterate a hemorrhoid, but up to three hemorrhoids can be injected in a single treatment.[25] When properly employed in uncomplicated internal hemorrhoids, sclerotherapy gives good results; acting to stop the bleeding and shrink the piles.[26,27]

Injection therapy for hemorrhoids is said[28] to have originated in Illinois in 1871. Experience gained since then shows that only internal hemorrhoids are suitable for injection.[2,24] As noted by Hodges,[29] patients with external hemorrhoids, strictures, fissures, ulcerations, fistulas or any inflammatory process, should not be treated by injections. However, says he, there are many occasions when injections may be used to advantage as a paliative measure, such as to control hemorrhage while preparing a patient for surgery, or in cases of advanced pregnancy, old age, diabetes, tuberculosis and cardiorenal diseases, where operative procedures may be definitely contraindicated.

About a decade ago, Whitney and Angelo[30] stated that almost all simple uncomplicated internal hemorrhoids could be obliterated by injection with suitable chemicals. More recently, Terrell and Chewning[31] similarly observed that the vast majority of patients with internal hemorrhoids will be benefitted by injection treatments. In the same vein, Krolicki[32] reported that the injection treatment of internal hemorrhoids can be carried out satisfactorily in from 50 to 90 per cent of the cases. In selected cases, says he, it is an easy, relatively painless and satisfactory procedure and patients are satisfied with the results. The method requires no anesthetics, and is economical. It is an ambulant procedure and therefore does not necessitate hospitalization. No period of disability should occur, and complications are relatively few.

Sclerotherapy has been used in the treatment of various other conditions.[2] It has been employed rather extensively, for example, in the treatment of hernia, but there is considerable difference of opinion regarding the value of injection therapy in this condition.[33,34] The consensus seems to be that it is a useful procedure

(*Continued on page 828*)

New Cosmetic Raw Materials

by Harry Hilfer

During the past twenty years there has been a gradual transition from cosmetic formulas which consisted entirely of natural materials to incorporation of increasingly larger amounts of synthetic substances. This has been especially true of cosmetic finished products dependent upon the use of surface tension reducing agencies either as emulsification aids or as detergents, but is by no means limited to this classification. Perhaps the outstanding reason for the drift from traditional material usage has been the phenomenal growth of chemical research and manufacturing facilities and the necessity of cosmetic manufacturers to find a competitive edge.

A complete list of new raw materials would necessitate a full volume for its exhausting incorporation, but a treatment of classifications of cosmetic compounds being used and the properties they possess for cosmetic utilization would perhaps give some people clues to specific compounds which would interest them. Most of the compounds represented are synthetic in their origin; however, there are some which are more highly refined natural materials.

Perhaps the greatest changes have occurred in the field of surface active agencies. Here we have a situation which not too long ago was limited to the use of beeswax, borax or soaps and gums. This limited field has expanded to a choice of cationic, nonionic and anionic emulsifiers, which may be used as emulsification agents dispersing agents and as detergents.

The sulfated alcohols are perhaps the best representation of the anionic surface reducing agencies.

Researcher checking degree of fineness of pigment dispersion in ointment under study, Ointment Research Lab., Sharp & Dohme.

There are now obtainable as sulfated lauryl alcohol-sodium, -ammonium or -triethanolamine salt. They are used primarily as detergents in shampoos. Their chief advantage as compared to soap shampoos lies in their resistance to precipitation when used in hard waters. There are arguments pro and con regarding their efficiency as compared to soaps, but all these arguments must be predicated by assuming that the water used is soft. There is no argument about which is superior in hard water. The sulfated lauryl alcohol compound is by no means the only type being used, since sulfated monoglycerides are in use as well as a host of others.

Of increasing importance has been the alkyl aryl sulfamatic used in conjunction with sequestrants, chiefly polyphosphates. Their use in cosmetics has largely been in powdered bubble bath preparations, since the polyphosphates have a tendency towards hydrolysis in aqueous solutions. They are a good deal cheaper to prepare than are the sulfated materials and have therefore taken the industrial and home washing fields by storm, particularly when it was found that a small addition of sodium carboxymethyl cellulose prevented redeposition of the soil on certain types of fabrics. The alkyl aryl sulfamates are not as resistant to precipitation as are the sulfated alcohols in hard water and therefore the necessity of using sequestering agents in conjunction with them. The use of these sequestrants measureably increases the activity of the sulfated alcohols as well since they prevent formation of calcium salts which are not as active as are the sodium salts—but do not precipitate as an insoluble scum.

The use of sulfated and sulfonated detergents also extends the pH range of the shampoo itself. It is generally agreed that a pH slightly acid of neutral would be most desirable for shampoo purposes, and it is possible to formulate such shampoos with these agencies where it would be impossible with soaps. Sulfonated compounds are stable against hydrolysis at both the acid and alkaline pH ranges normally employed. Though sulfated compounds are hydrolyzed at acid pH's it is possible to buffer the vehicle to a point where such hydrolysis is not noticeable.

For use in shampoos, in addition to these anionic active compounds are a large and diverse quantity of nonionic compounds which is growing not only in quantity but in importance. Perhaps the most commonly used of these for shampoo formulations are the so called alkanolamine condensates, based on the patent which specifies the use of two notes of a dialkanolamine condensed with one note of a fatty acid—usually lauric. These compounds are also quite stable and capable of good detergency. They are used in some cases to the exclusion of other detergents but more commonly in conjunction with the sulfated detergents or soaps. They are cheaply prepared and in addition to their utility as detergents they also are used to increase the viscosity of the vehicle in which they are employed. When used in conjunction with soaps in hard water they are also capable of dispensing the calcium soaps found so that the adhering sludge is minimized. Some soap shampoo manufacturers have therefore incorporated an appreciable percentage in their formulations for this reason. Other nonionic detergents are more dependent on the balancing of ethoxylated hydrophiles against a lipophile. These compounds are available either as esters or as ethers.

In addition there have recently appeared on the market other classifications which are thio ethers and a new classification which has but recently appeared consisting of a polymer of propylene glycol with ethylene glycol polymers joined to it at both ends. At this moment the anionic compounds predominate in shampoo formulas, but at the same time in the future there could possibly be a shift since nonionic compounds are thought to be somewhat less irritating than anionic. This statement, however, can not be taken as being true of all compounds in each category, since there is considerable overlapping of characteristics.

In shampoos also, there have appeared a number of other materials which are used to enhance certain functions of the shampoo. Amidic compounds of fatty acids particularly have come to the fore for use as foam stabilizers and hair conditioners. Descriptions of the mechanism of hair conditioning is a highly controversial point, but most workers agree that the best description of such an agency is one that helps make the hair feel smoother and contributes to its manageability. How this is done is highly argumentative. Also recommended as hair conditioners have been polyoxyethylene esters.

Before leaving the hair preparations a short discussion of cationic materials should be included. The advent of the home permanent wave was the forerunner of the cream hair rinse—whose function is to impart a smoother feel to the hair after treatment with the wave solutions and to make the hair more manageable. Because of their high degree of substantivity to proteins, the quaternary ammonium compounds have been adapted for this purpose. Quaternaries may be synthesized containing any derived chain length. The shorter chain—(lauric) possessing the greater detergent characteristics and also bacteriostatic properties. The longer chain principally stearic lose these properties to a large extent but enhance the substantive function. Quaternaries of this type are therefore being used to fulfill this function.

The same classifications of synthetic surface tension reducing agencies, with changes in the ratio of lengths of the hydrophile lipophile lengths have become increasingly popular as emulsifying agents. Perhaps the first of these used in cosmetic manufacture was glyceryl monosterate, used in conjunction with a small amount of soap. There are now available monoglyceride of olive and coconut oil fatty acids as well. In addition there are also available monoesters of ethylene glycol, the various polymers of ethylene glycol, porpylene glycol and more recently sorbitan. The sorbitan esters represent a wide and useful range. Compounds in this category consist of mono di and tri esters of lauric, oleic, palmitic and stearic acid as well as ethoxylated deriv-

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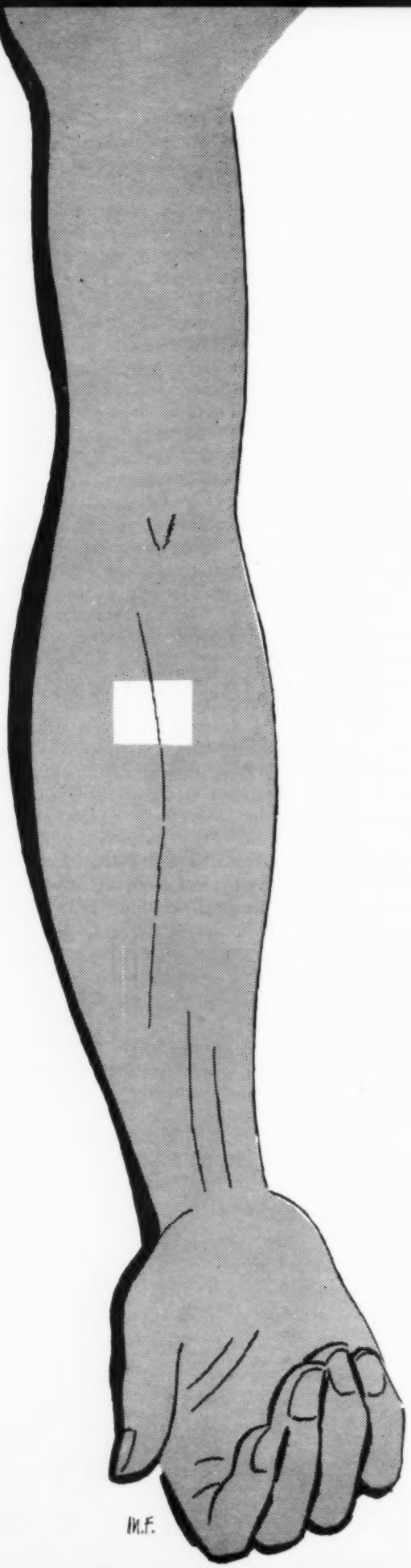

Hazards of Cosmetic Use*

by M. Geneva Gray, Ph.D.

ARTHUR D. LITTLE, INC., CAMBRIDGE, MASSACHUSETTS

One of the corner stones upon which the American cosmetic industry is built is the unwillingness of most women and many men to believe that their skin, hair and nails are ever quite perfect. Estimates of the number of persons in the United States who customarily use one or more cosmetic preparations can not be exact, but it is safe to say that few, if any, would be omitted. In light of the great number of users, the incidence of injury from cosmetics is probably greatly overrated. However, the potentially serious injury which may be sustained by any individual makes serious consideration of cosmetic hazards by manufacturers, consumer groups and governmental agencies entirely proper. If any phase of cosmetic hazards is to be deplored, it is that these groups have not previously found a common meeting ground which would lead to adequate protection of the interest of all.

The tremendous increase in the use of cosmetics has been a factor in increasing the number of cases of injury from their use, but the percentage incidence has shown a declining trend for some time. That the number of injuries due to cosmetics is declining is shown by the declining rate for products liability insurance in the cosmetic field. Obviously, since more women than men use cosmetics, and since women use more types of cosmetics, it follows that their sex will be prominently

*Presented before Association of Consulting Chemists and Chemical Engineers Oct. 28, 1952.

represented in the group claiming injury from cosmetics. In consideration of the annual volume of the cosmetic industry, it is a matter for surprise that on the basis of probability alone more cases are not reported. Many are due to hypersensitivity to specific components of a cosmetic preparation, but it is rare in recent years that generalized contact dermatitis in a group of consumers has been reported.

It is incontestable that many cases of injury from cosmetics result from failure of the user to follow the directions of the manufacturer. No matter how prominent the instructions for use, there will always be women and men who believe that if a little is good, a lot is better. Women are naturally gamblers and are willing to take chances even when they know that a certain risk is involved. Often damage charged to cosmetics has been an exacerbation of pre-existing skin disease or lesions.

Too much time has been expended in the recent past in attempts to assign blame exclusively to one group or another. That is not my purpose tonight, but rather to indicate some of the hazards which potentially attend the use of cosmetics and to review the present attitudes of regulatory agencies toward the need for additional statutory control.

The terms "toxicity" and "hazard" are loosely used and it will be well to define them before proceeding further. "Toxicity is the capacity of a substance to produce injury; "hazard" is the probability that injury will result from use of the substance in the quantity and manner proposed. A chemical may be highly toxic yet under the conditions of proposed use may entail no hazard. The determination of a specific hazard must be based on evaluation of all the factors involved including pharmacological action, physical properties and conditions of use. These latter include site and method of application, frequency and duration of contact with body tissues.

It was in 1938 that Federal regulatory powers were extended so that supervision of cosmetics in interstate commerce was instituted. This responsibility was allocated to the Food and Drug Administration, then a branch of the Department of Agriculture and latterly under the Federal Security Administration. Under the revised Food, Drug and Cosmetic Act, cosmetics are defined as "articles to be rubbed, poured, sprinkled or sprayed, introduced into or otherwise applied to the human body or any part thereof for cleansing, beautifying promoting attractiveness or altering appearance or any articles, intended for use as components of such articles." The Act further states that "a cosmetic shall be deemed to be adulterated if it bears or contains poisonous or deleterious substances which may render it injurious to users under the conditions of prescribed use or under such conditions as are customary or usual." Certain exemptions are made if a cautionary label is attached to the container. The burden of proof of such adulteration is upon the government which must establish by "a preponderance of evidence" (in a civil action) or "beyond reasonable doubt" (in a criminal action) that the product in question is harmful or deleterious to public health. The Department of Justice will not proceed with seizure unless such proof has been made. The basic inadequacy of such procedure is that considerable time is required to assemble proof, present it to the appropriate court and make the seizure. Meanwhile, sale of the suspect cosmetic has continued and if it is harmful as claimed, many additional persons may have been damaged before the sale is legally stopped.

Soaps were specifically excluded from the 1938 Act. Although requirements are made for the pretesting of new drugs by this Act, none are specified for cosmetics.

Various states have statutes which provide for supervision of cosmetics, but there is no uniformity of requirements among them. Under the Federal law, many preparations are by definition both drugs and cosmetics and under the provisions for pretesting new drugs are subjected to close scrutiny.

Although any body tissues may receive applications, it is chiefly to the exterior surfaces of the body that cosmetics are applied. The skin and accessory tissues or appendages, i.e. the hair, nails, sweat glands and mucous membranes are those which receive cosmetic treatment although certain orifices such as the ears and the buccal cavity may properly be included.

The skin is the largest organ of the body and is especially vulnerable because of its external situation. Abnormal or diseased skin is even more vulnerable to cosmetic damage than is normal skin. Its functions are several, notably those of temperature regulation, and protection of underlying tissues from physical agents such as heat, cold, and sunlight. The heat-regulating function of the skin is mediated through the varying supply of capillary blood to the surface of the body and by the production of perspiration which of itself accounts for a major part of the body's heat loss. The network of blood capillaries permits heat loss up to 73 per cent by conduction or radiation. When the temperature of the air is materially less than that of the body, the blood vessels in the skin are constricted and heat loss is decreased. When the temperature of the air is elevated, the blood vessels are dilated, more warm blood reaches the skin and thus more heat is lost by this means. Sweating amplifies the heat loss by its evaporation from the body surface. The loss of water by this means may amount to 2 pounds in 24 hours.

Penetration occurs readily through broken or traumatized skin after which the material may easily enter the blood capillaries or lymphatic vessels. When this has taken place, the material is distributed throughout the body but is, of course, diluted in proportion to blood volume and several other physiological factors. If the amount of a toxic substance which penetrates the skin be sufficient, the toxic effect will be the same as if it had been administered by oral or parenteral routes and a generalized systemic effect ensues.

Since cosmetics are applied chiefly to body surfaces, the types of injury which may be caused are well-

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Chlorophyll and Derivatives*

By Walter H. Eddy, Ph.D.

Derived from leafy green plants, natural chlorophyll exists in two forms: *chlorophyll a* and *chlorophyll b*. The empirical formula for each form is:

Chlorophyll a: $MgC_{32}H_{30}N_4O\begin{cases}COOCH_3\\COOC_{20}H_{39}\end{cases}$ or $MgC_{55}H_{72}N_4O_5$

Chlorophyll b: $MgC_{32}H_{28}N_4O_2\begin{cases}COOCH_3\\COOC_{20}H_{39}\end{cases}$ or $MgC_{55}H_{70}N_4O_6$

We can see at once that form *b* differs from form *a* only in possessing one atom more of oxygen and two less of hydrogen. It is suggested, therefore, that form *b* is the oxidized form of chlorophyll *b*.

In all green plants the following ratio prevails: 2.5-3.5 parts of *a* to one part of *b*. Neither form is soluble in water although both are easily dissolved in fats and fat solvents such as alcohol (100 per cent), ether, chloroform, acetone. The principal method of chlorophyll extraction today employs such fat solvents, applying them to dehydrated plant or leaf meals. Because its chlorophyll content is relatively high, alfalfa leaf remains the preferred source. The solvent process for extraction, however, may be successfully applied to any dehydrated source of chlorophyll.

In dry form chlorophyll *a* is a blue-black powder which in solution imparts a blue-green color.

Chlorophyll *b* in dry form is a greenish-black powder and when dissolved produces a yellow-green rather than a blue-green color.

Ordinarily, when oil-soluble natural chlorophyll is produced by solvent extraction no attempt is made to separate the two forms. Since all plants, however, contain other fat-soluble substances besides the two forms of chlorophyll, these, too, will be present in the extract. Thus a crude extract of the chlorophylls will contain fats, waxes, sterols, carotenes, xanthophylls in addition to the chlorophylls themselves. Some of these companion products are marketable (*e.g.* carotene or provitamin A and xanthophylls).

Production of 100 per cent chlorophyll *a* or *b* is a difficult and expensive process. Such purity, however, is not ordinarily realized in the commercial grades of oil-soluble chlorophyll because the impurities themselves are fat-soluble products not easily separated from the chlorophyll. Being also non-toxic, like chlorophyll, these impurities are harmless when used along with it in the coloring of soaps, cosmetics and some foods.

*From a forthcoming book prepared by Dr. Eddy for American Chlorophyll Division, Strong Cobb & Company.

From natural chlorophylls certain important derivatives can be developed which are both chemically and physically distinct from the mother-pigment. The formulae of both chlorophyll *a* and chlorophyll *b* contain a nucleus combined with two organic esters, a $COOCH_3$ group and a $COOC_{20}H_{39}$ group. The presence of these two groups made it obvious to chemists that if chlorophylls were subjected to alkaline hydrolysis the effect would be to split off the two alkyls (CH_3 and $C_{20}H_{39}$) in the methyl alcohol (CH_3OH) and phytyl alcohol or phytol ($C_{20}H_{39}OH$). These could be recovered from the hydrolysis and had market value. The phytol in particular has value in providing an important ingredient for the synthesis of vitamins E and K. In this process the displaced alkaline groups are replaced by the metal of the alkali used in the saponification, usually potassium or sodium hydroxide.

The saponification of chlorophylls, then, was important as a means of obtaining the relatively high priced phytol, but when the residue of the saponification was examined it was found to still produce a green color in solution and was now water-soluble. Chemists created the name "chlorophyllin" for this water-soluble magnesium-containing derivative. It became of increasing importance when it was demonstrated that to heal and to deodorize chlorophyll must be in the water soluble form. It should be noted that one gets little or no deodorizing effect from ingesting either natural chlorophylls *a* and *b* or plants containing them, and at present all the healing ointments, toothpastes, breath deodorizing tablets, etc. on the market owe their effect to the water-soluble "chlorophyllins" which they contain. The empirical formula for magnesium, potassium chlorophyllin is

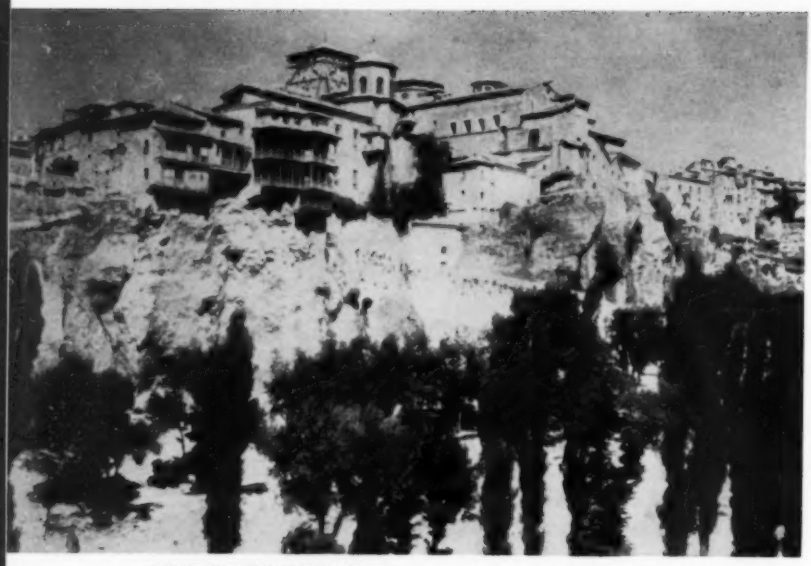
$$MgC_{32}H_{31}N_4(COOK)_3$$

When these magnesium chlorophyllins were prepared by saponification it was found that upon their being dissolved in water (the water must be on the alkaline side as they precipitate in acid water solutions) the color, bright green at first, gradually faded in exposing the solution to light. Chemists, therefore, sought a way to stabilize this color and still retain water-solubility and, medicinal value. It was found possible to do this by substituting for the magnesium in the molecule another metal. This can be done with copper, iron, nickel and various metals, but copper is to be preferred for various reasons. The chlorophyll element of most of the products now on the market are copper-potassium or sodium-chlorophyllin.

Formula $CuC_{32}H_{31}N_4(COOK \text{ or } Na)_3$

Since it requires very little of the chlorophyllin for coloration and medicinal effect, and also, since the non-chlorophyllin water-soluble impurities that accompany the saponification of natural chlorophylls do not interfere with coloration or therapeutic action, chlorophyllins are supplied today in varying grades of purity. One of the difficulties in making earlier appraisals of chlorophyll's therapeutic power lay in the fact that the precise form of the pigment used was not clear. A report, for instance, might refer to "pure or crystallized chlorophyll" when it actually was not that at all but a chlorophyllin. Similarly, the product used might, unsuspectingly, have been what we know today as pheophytin. Up to the present, research has yet to discover just what part of the chlorophyll molecule is responsible for its therapeutic action. When this and other details are ultimately discovered, however, still other forms of chlorophyll or its derivatives will be welcomed to the physician's armentarium. Until then, therapeutic application must be confined to the stable chlorophyllins whose values have at least been partly determined.

Clinical experiments, for instance, show that ointments containing 0.5 per cent of either copper, magnesium, potassium or sodium chlorophyllin heal wounds and lesions. They also show that saline solutions with *(Continued on page 844)*



COURTESY FRITZSCHE BROTHERS

Essential Oils in Europe and Africa

Back from a six months' trip of 13,000 miles during which he visited France, Spain, Morocco, Algeria, Austria, Germany, Switzerland, Sicily, and the Italian mainland, Dr. Ernest S. Guenther, chief chemist and technical director of Fritzsche Brothers, is back to report on his findings. The purpose of Dr. Guenther's trip was to make a detailed survey of developments in the European and African essential oil industry with particular regard to the production of lavender oil and lavandin in Southern France; the natural flower oils—jasmine, rose, orange blossom—of the Grasse region; the Spanish essential oils of spike, rosemary, thyme, origanum, and eucalyptus; the situation with respect to orris root production near Florence, Italy; the citrus oil and jasmine flower oil industry of Sicily and Calabria; pine needle oils of the Tyrol; and new developments with respect to the production of jasmine, rose, and geranium in Morocco. From his on-the-spot observations and impressions, the following quotations from his report should be of interest to consumers of these essential oils and perfume materials.

The Flower Oil Industry of Grasse

This once bountiful industry is gradually declining and for the following reasons:

(a) The high cost of labor for cultivation work, picking flowers, etc., which is reflected in the high cost of the product.

(b) The ever increasing population of the Cannes-Grasse region with resultant real estate developments encroaching upon the flower fields.

(c) The development of the coastal region as a pleasure resort area which has brought with it a great demand for fruits and vegetables and even cut flowers. Farmers are making much more money supplying this demand than they could selling jasmine or rose flowers for perfume purposes. As a result, the acreage of the flower fields has been greatly reduced. Many of the older fields have been discontinued as no longer productive, so that today, where formerly there were larger expanses of rose fields, for example, on every hand, one now has to look around and travel considerable distances to find them. Meanwhile, in Sicily, Calabria, Algeria, Egypt and Morocco, the growing fields have been considerably increased, due largely to the fact that land and labor is much lower priced. Also climatic conditions in these countries are excellent and there is less danger of frost. To cite one example, there is no necessity to hill up Jasmine as a protection against frost in these countries in the late fall, whereas in the Grasse region this *is* necessary.

Still, however, the Grasse region does enjoy several advantages:

(1) There they have the "know-how" in growing and in the methods of extraction. Hence, better qualities are produced.

(2) The variety of floral products produced in the Grasse region is greater and this provides continuous work for the best part of the year.

(3) Grasse manufacturers are well established with the Paris perfumers by personal connections, and they know precisely what the Parisienne market wants.

Nevertheless, it is a declining industry and in another ten or fifteen years will be worse. Even today, there are really too many factories in Grasse for the available flowers and many of these could be closed. Some are seeking activity in other fields, as, for example in flavorings and pharmaceuticals.

Oils of Lavender, and Lavandin

The production of Lavandin has increased tremendously during the last few years and very fine qualities of oil (containing up to 30 per cent of esters) are being produced. This high quality originates from the variety of Lavandin known as Abrial. In 1952 the total production of Oil of Lavandin was about 250,000 kilos. Oil of Lavender production totaled approximately 40,000 kilos. A very interesting development in the Lavender and Lavandin region has been the introduction of the Eysseric and Prince stills which work much more rapidly than the old-fashioned types and save half the time while conserving half the labor.

The very beautiful and extensive Lavandin fields, particularly in the Basses Alpes Region are most impressive. On cultivation, Lavandin gives a much higher yield of oil per acre. At the same time, the plantings are much hardier and live much longer than those of Lavender. Growers today, therefore, are much more interested in cultivating Lavandin than Lavender.

New Developments in Morocco

Recent developments in Morocco are very significant. A group owning something like 1,000 acres in Morocco now has much of this under cultivation with Geranium, Jasmine and Rose. These plantings were started shortly after the war and some of them have already come into full production. Others will be in full yield in about two years. All of the work is done according to the principles of modern agriculture and as much of it as possible is mechanized. It is a very interesting development to watch because if nothing unforeseen happens, Morocco may become a most serious competitor of the Grasse region. Such unforeseen factors as plant diseases, insect pests, and even political upheavals could, of course, interfere with this development. Morocco, after all, is a new country as far as the white man is concerned and very little is known about agricultural conditions in the various sections as far as aromatic plants are concerned. In other words, the present venture is a pioneering one and it will require the findings of a five-year average on any of these Moroccan undertakings to determine the productivity of the soil.

In the Dadés Valley in Morocco, the natives grow roses in hedges around their fields. These roses for centuries have been dried and shipped to various parts of North Africa for use in native medicines and beverages. They have even been exported to France and America. There are two extraction plants in the Dadés Valley for treating these roses but last May the whole crop was a failure because of a very strong frost and as a consequence no roses were available. This Valley is located south of the High Atlas but at such a high altitude that in winter it is subjected to strong frosts.

Sicily and Calabria

There have been impressive developments in Sicily during the last few years with regard to the production of Jasmine Concrete. Sicily and Calabria together produce now about 1800 kilos of Concrete of Jasmine per year. This new industry owes its development chiefly to the work of the Stazione Sperimentale in Reggio, Calabria.

Compared with the Grasse region, Sicily and Calabria offer many advantages in the cultivation of Jasmine flowers, for example:

1. The flowering season lasts from June until November—much longer than in the Grasse region.

2. The labor available in Sicily and Calabria is much cheaper than in Grasse where harvesters are paid 165 French francs (47 cents) per kilo of blossoms, as against the 135 Italian lira (22 cents) per kilo of flowers paid in Italy.

3. Hilling up the Jasmine plants during the winter months as protection against frost damage is unnecessary in this region. On the other hand, water for irrigation purposes is more expensive in Sicily and Calabria than in Southern France, but altogether, the odds are more favorable in Southern Italy than in Grasse. The heavy production of Jasmine Concrete in Southern Italy will undoubtedly be reflected in lower

(Continued on page 847)

COURTESY FRITZSCHE BROTHERS

RISING DEMAND Continues for Ae

Variety Also Increases Steadily 55

When pressure-packed (aerosol) products made their debut back in the war days of Guadalcanal and other tropical places overseas, they gained front-page prominence. Headlines called them "bug bombs," and they were aptly named.

These early aerosol insecticides literally "bombed" pesky insects right out of existence. They rid sweltering tents of all kinds of vermin. And they did it effectively, harmlessly and quickly. G.I.'s welcomed *these* "bombs"!

AFTER VJ DAY—"bug bombs" turned civilian. They were soon seen in homes throughout the country. And again they scored a hit . . . rated high with housewives everywhere. Not only were these domestic aerosols more effective than many other types of insecticide dispensers, they were also handier, quicker-acting and (when correctly used) more economical.

It was natural that manufacturers of various products began to look into this new method of dispensing. They believed it might stimulate sales. And they were right. Many tested the idea . . . packed old stand-by products in modern, aerosol containers . . . and soon found that consumers liked the idea, too. Thousands immediately began buying, using and rebuying these new aerosols.

From the start, growth of the aerosol-product industry has been little short of amazing. Brands, styles, and sizes have multiplied steadily. Results of a recent survey conducted by the Chemical Specialties Manufacturers Association showed that in 1951 more than 34,180,000 aerosol-product units were packed. Of these, 25,478,400 were in twelve-ounce, low-pressure containers; 8,049,126 in containers of six ounces or less. Insecticides packed in high-pressure containers totaled 656,599.

Scores of manufacturers have realized that this modern way of packaging offers a new key to consumer acceptance . . . a new road to increased sales of many different products. In 1951, according to C.S.M.A. estimates, the re-

DUPONT
REG. U.S. PAT. OFF.
150th Anniversary
BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

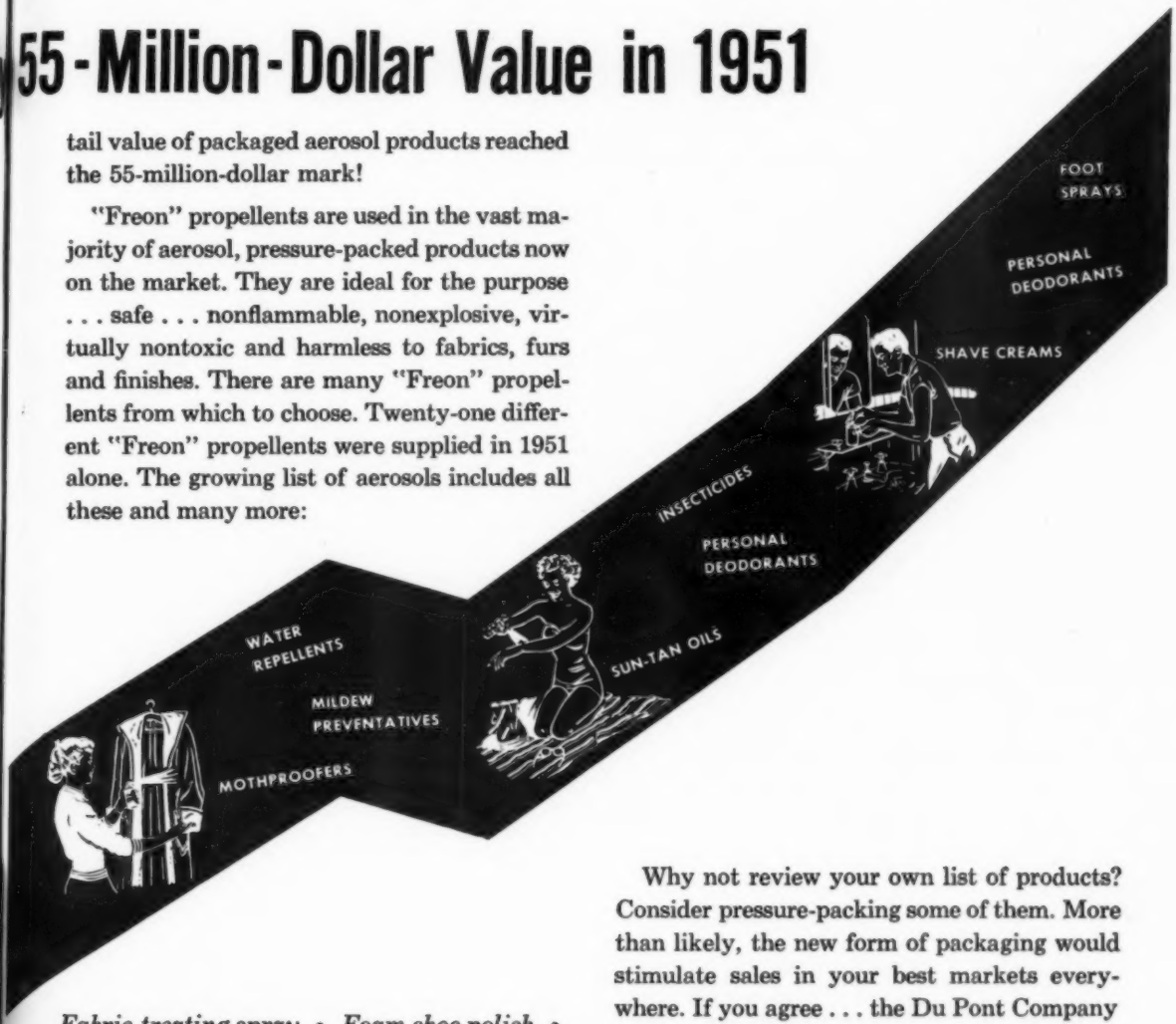
"FREON" SAFE

Aerosol Pressure-Packed Products

55-Million-Dollar Value in 1951

tail value of packaged aerosol products reached the 55-million-dollar mark!

"Freon" propellents are used in the vast majority of aerosol, pressure-packed products now on the market. They are ideal for the purpose . . . safe . . . nonflammable, nonexplosive, virtually nontoxic and harmless to fabrics, furs and finishes. There are many "Freon" propellents from which to choose. Twenty-one different "Freon" propellents were supplied in 1951 alone. The growing list of aerosols includes all these and many more:



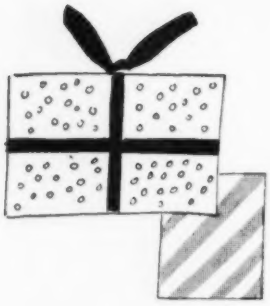
Fabric-treating spray • Foam shoe polish • Space insecticides • Residual insecticides (Roach and ant sprays) • Room deodorants • Mothproofers • Insect repellents • Water repellents • Athlete's foot spray • Shave creams • Artificial "snow" • Perfumes • Sun-tan oils • Hair lacquers • Dog sprays • Personal deodorants • Rug and upholstery cleaners and dyes • Burn treatments.

Why not review your own list of products? Consider pressure-packing some of them. More than likely, the new form of packaging would stimulate sales in your best markets everywhere. If you agree . . . the Du Pont Company will gladly send you informative literature on "Freon" propellents including a booklet: "Package for Profit." In addition, "Kinetic" technical service is also available to assist you with any propellent problem and help determine the right propellent to meet your specific needs. Address: E. I. du Pont de Nemours & Co. (Inc.), "Kinetic" Chemicals Division, Wilmington 98, Delaware.

PROPELLENTS

KINETIC
REG. U. S. PAT. OFF.

"FREON" is Du Pont's registered trade-mark for its fluorinated hydrocarbon propellents.



Packaging and Selling

Not Aping but Realism

The editorial style of advertising is making rapid gains in this industry, particularly by fragrance and cosmetic advertisers. There is an apparent trend for this form of advertising in every industry and one survey indicates that 11 per cent of advertising today has moved over into this style of presentation. "Aping the editors" is given as the smart reason for this trend.

In the cosmetic industry the conspicuously successful advertising of the past year has been predominantly among those using the editorial style. In a panel of the Southeastern Toilet Goods Show held in Atlanta, where a discussion of this form of advertising proved to be the most interesting question, it was almost unanimously agreed by retail store buyers and by the manufacturers' sales representatives in this territory that this form of advertising in daily newspapers was producing noticeably increased results at the retail counter.

In this industry Helena Rubinstein deserves the credit for initiating this new style of advertising for the cosmetic industry. This advertising has been generally recognized as productive and as commanding a great deal of consumer attention and has had a deep influence in establishing the style for the cosmetic industry.

Cosmetic advertisers have no deep seated craving to imitate editors unless they are convinced that the editorial style of presentation as used in their advertising, will increase the sales effectiveness of this advertising. In this industry the increasing use of editorial advertising is based on the obvious fact that it is now, at this period? more productive. The reason for this great productiveness apparently stems from the fact that the consumer today is more factual, wants more information and is interested in anything new the advertiser has to say. It is becoming increasingly apparent that a great deal of the traditional advertising copy which makes use of an over-all glamour or fashion illustration, often hardly distinguishable from competitors' illustrations, and subordinating copy to a few meaningless words, is failing to do a good job of salesmanship.

In the article "Problems of the Billion Dollar Cosmetic Industry" last month, we offered the opinion that consumer buying habits in cosmetics and fragrances have been undergoing radical changes. We said here that the buying today is much more realistic and factual, that consumers are more and more thinking of cosmetics in terms of performance and a utility use and that they are much more receptive to inventions and developments and news of any kind about products, than the consumer of pre-war days.

In our opinion the growth of editorial advertising is a delayed recognition of the change in the way consumers are thinking and are buying packaged products.

Retail Sales Peak?

Eli Lilly & Company have just published the 20th annual survey of drug store operations and an optimistic report it turns out to be. 1951 average sales of these carefully surveyed drug stores reached the highest peak ever recorded, with an average sale of $89,756, which means a gain of 7.4 per cent over 1950. This is the biggest sale here since 1948. During 1951, pre-tax profits of the 1,248 stores increased over 1950 by 12 per cent. Margins continued steady, that is 32.6 per cent of sales as against 32.8 per cent in 1950. According to a Lilly conclusion, the audit seemed to indicate that opportunities to obtain profits at a gratifyingly satisfactory rate exists in drug stores of all sales sizes.

At about the same time, at a meeting of the National Association of Retail Druggists, Keith Keller, Chairman of the Associated merchandising committee, offered the opinion that sales volume is no longer the answer to the retail druggist. The inference from Mr. Keller's talk is that many druggists have been getting by because of consistently increasing sales, but the problem of the future will be to find some other method of absorbing continually increasing costs.

Pitfalls in Promotions

Particularly in the cosmetic business, promotions are mushrooming and will probably be a substantially active factor next year.

At a meeting of the Association of National Advertisers some rules were laid down for successful promotions.

This tall, round Duraglas toilet bottle, #A-4719, capped with a smart lustrseal closure can help you capitalize on brand recognition at the point of purchase.

MAKE-UP makes the difference...

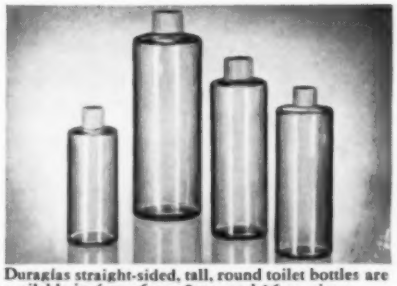
gives your package individuality . . . your line a family look!

With impulse buying growing, every package you send to market must have *impact* at the point of purchase.

Your product will make a hit with consumers when packaged in a distinctive Duraglas sales-package. They're economical . . . so practical in use.

There are hundreds of stock-mold Duraglas containers from which to choose one that's exactly right for your product. Then, packaging specialists at the Duraglas Center help you add glamour and sales appeal to your selection with effective designing of color, label and closure.

In today's competitive selling conditions you need to capitalize on the distinctive individuality you can give your product in a Duraglas sales-package. And remember, no matter what the market is like, it doesn't pay to let your package get out of the habit of selling every minute it is on display.



Duraglas straight-sided, tall, round toilet bottles are available in 4-oz., 6-oz., 8-oz., and 16-oz. sizes.

Duraglas packages are protectors of quality

OWENS-ILLINOIS GLASS COMPANY • TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

Faster capping

NEW CAP DESIGN TAKES HIGHER LINE SPEEDS

Here's a cap that will give you greater line speeds—if cap breakage is now limiting your output.

Armstrong's Hi-Tork Caps can take the torque and impact of high-speed equipment because extra plastic has been added at points of greatest stress. The dome-to-skirt ratio, too, has been modified.

Hi-Tork Caps' newly designed thread contours increase the contact area for a better seal with less strain on the cap. And the recessed design leaves no projections to chip or cause cap breakage.

You'll be amazed at the punishment this cap can take without breaking. This means fewer rejects and less downtime.

But try them on your own lines. We'll gladly help you arrange for a test run. Just call your near-by Armstrong office or write Armstrong Cork Co., Glass and Closure Division, 1912 Prince Street, Lancaster, Pennsylvania.

ARMSTRONG'S *"HI-TORK"* CAPS

Molded for extra production on high-speed machines

Since a consumer promotion, regardless of its particular form, is largely a forced sampling proposition, the brand in a promotion should be one that has public recognition and whose sales are climbing.

There is a distinct advantage in a combination offer in tieing in with a well known brand in another class of merchandise rather than your own roduct. This gives a two-way opportunity for the combination to attract new users.

It is working against the tide to run a promotion of a product which shows declining sales.

A promotion on a new or recently introduced product has a much better chance than a promotion on an old well established one. People temperamentally like to try something new today.

If you try to pay for a promotion by taking the money from scheduled advertising the chances are that the promotion will not see any over-all business increase.

Solomon in the Tax Office

In some part of the trade it has many times been popular to illustrate and talk about the human body as a machine, and although like the machine, common experience has shown us that depreciation and finally complete obsolescence takes place. The Internal Revenue Bureau announces that for tax purposes this just aint so. A group of models asked the Bureau if bodily depreciation entitled them to a tax allowance. These girls stated that they were subject to "age, exhaustion and obsolescence". Solomon in the Bureau had this to say: "charm, beauty and talent, while undoubtedly of great value in your profession, are not generally recognized as depreciable for tax purposes. American beauty never becomes obsolete."

Rich Market

The Bridgeport-Stamford-Norwalk area of Connecticut is the richest retail market of the 162 standard metropolitan markets in the United States according to Sales Management's annual survey.

The New York City-Northern New Jersey market, by far the richest U. S. market in terms of population and volume, ranks 53rd on a per capita basis and 64th in average family sales

How Far?

So convincing has been the proof furnished by the house-to-house companies that the demonstrator in the home has been doing a bigger and better sales job than the demonstrator behind the counter that one of the leading cosmetic companies has just come up with a sales plan for combining the two types of demonstration. This experiment is now under way in up-State New York and initial reports have generated some enthusiasm.

This plan does not contemplate an abandonment of retail distribution or an infringement of the retailer, or competition with him in any way. The house-to-house plan is operated through a retail agency, with the store paying part of the expenses and participating in the selling program in every way.

We cannot help wondering, however, how far some parts of the cosmetic industry can continue piling up selling costs. This company has their own salesmen visiting stores, their own system of full pay demonstrators and some partial demonstrators and PM's in other stores, and it has travelling supervisors paralleling the salesmen to work with the girls behind the counter. Now an additional selling system is to be built up by women agents who will visit the home as a plus to the retail selling staff anchored behind the counter.

Can This Be Drugs?

If you want to see what may be the drug store of the future, Easterners can soon visit Levittown in Pennsylvania and look at the new Sun Ray drug store. This new drug store will have a total of 15,000 square feet of which 9,600 will be on the street floor. The store will house more than thirty different departments including a California style ranch room restaurant with seating capacity for 150. A special prescription room separated from the rest of the store, will be equipped with comfortable waiting space.

Wonderful, If You Can

Some of the supermarket operators whose gross margin has been going down to a penny or less on each dollar of sales are looking with a jaundiced eye on the loss leader. Said one of them recently, "Grocery chains and supermarkets should substitute profit leaders for loss leaders."

New Tablet Machine

A machine has just been perfected by the Arner Company, pharmaceutical manufacturers of Buffalo, to automatically and precisely sort out imperfectly sized medical tablets. This separates tablets according to their width and thickness and is capable of screening as many as 3,500,000 large sized tablets in an eight-hour day.

A Self Service Plus

The Bayer Company reports an increased sale from 11 per cent to 100 per cent in chain and independent outlets from the new self-service counter demonstrator for the pocket-size Bayer Aspirin tablets. These self-service sales from the counter unit are said to be additional business that has not cut into the regular sale of Bayer's economy size 100's.

This self-service demonstrator for the 12's is 11 inches high and stands on a four-by-five-inch base which makes a compact stand for limited space locations. It is all glass constructions which makes it easy to clean and has four small rubber pads on the base to prevent sliding or scratching the counter. Space for

CLOSURE DIVISION
CROWN CORK & SEAL CO. · BALTIMORE 3, MD.

three dozen metal containers of Bayer's 12's is provided, the tins being held in position by four guide rules which permit about 18 containers to tilt forward. Pilferage is discouraged by the clicking sound of the grooves when one is removed.

Display's the Thing

"Spitting into the wind" is the way Alan Berni, head of a packaging and industrial designing firm, put it in describing some advertisers' blind faith in the great impact of their advertising on consumers. In a series of studies of shopping habits in which 267 shopping lists were examined, brand names were conspicuously absent in many places. Less than half of the lists looked at made any mention of products by the brand names.

Package Rules

The Ten Commandments of packaging appeared in a recent issue of the Pennsylvania Packer and are reprinted here:

1) You must have the brand or company name, whichever is most familiar to the public, prominently displayed on the package.
2) You must have the product name supported by a blending of words and illustration to carry your hard-hitting sales story directly to the consumer.
3) The package must give the consumer an inkling of the aroma, taste and purpose of the product.
4) The package design must lend itself easily and effectively to advertising.
5) The package must stand out from competing brands on the retailer's shelf and sell in a distinctive, dignified manner.
6) The package must inspire consumer confidence, radiate quality and offer possible uses for the product.
7) The package must stimulate "mouth-watering" impulse buying.
8) The package must be fully equipped to make the sale after it has attracted the eye.
9) The brand or product name must be immediately and easily visible to a person of "bifocal" age at a distance of six feet.
10) The package must be practical and suited to the product. If the product is a multiple use item (such as jelly, peanut butter, apple juice) the package must be designed to make the product easily accessible and to keep it fresh and edible.

Two Hits

Two conspicuously successful Christmas promotions are already emerging in the cosmetic industry.

Reports in the retail trade clearly show that Ciro has done it again, that is two years in a row, with a combination package of perfumes selling at the moderate price of $5. This package is so beautifully conceived and executed and so obviously a fine buy that it is just walking off the counter. What's more, Ciro is proving that there is a volume market for fragrances if the right package and the right price can be arrived at.

The other scoop of the year will certainly be John Hudson Moore's revival of the historic shaving mug which any man or woman over 40 will certainly recognize as one of father's or grandfather's most prized possessions. The shaving mug which was a traditional feature of the Roaring Forties up to the popular use of the safety razor, features the different arts, crafts and professions, that is the Fireman, the Doctor, and so on through most of the masculine business activities of that time. The type and style of mug is as authentic of the times as Currier & Ives. Retailers tell us that many customers go into ecstasy over the sentimenta memory of this shaving mug.

Caveat Emptor

The Federal Trade Commission is apparently going to do its best to establish the "buyer liability" clause of the Clayton Act. This act forbids the buyer "from knowingly inducing or receiving prices that work to discriminate against other buyers". Apparently the commission is taking a new tack on what it considers discriminatory pricing practices. In the Standard Oil of Indiana case, it lost out when it was ruled that a seller may charge some lower prices to some customers than to others if he acts "in good faith" to meet the prices offered by a competitor.

The Supreme Court has agreed to rule on this issue in the case of the Automatic Canteen Company of America, the company distributing candy, gum and nuts through vending machines.

Still Changing

Self-service doesn't seem to be at all through with its period of evolution. Apparently we are in for some very interesting changes as this method of retailing finds maturity. S. N. Goldman, President of the Supermarket Institute and also President of Standard Humpty-Dumpty Supermarkets of Oklahoma City recently made this remark in a speech: "It is interesting to note that the experiments and ventures into self-service buying made by the Woolworth chain, department stores and hardware stores are taking place at the same time that supermarkets are moving into greater customer services."

Doll Demonstrators

Some cosmetic demonstrators are dolls but quite a few dolls are going into use this Christmas season as cosmetic demonstrators. At least three major companies have a doll tie-up which they are using as a way of getting their products and the demonstration of their use into many American homes. The Toni doll has already been sold in huge volume. This year is being introduced Joan Palooka, the doll that looks and feels like a newborn baby. This is a doll that is powdered and scented by Johnson & Johnson and accompanying

KEEP YOUR POWDER DRY

in handsome Continental Containers

If your product is sold in powder form and is made for bath or other personal use, a Continental container is the safest way to package it. These efficient metal cans help keep out moisture and light—help keep powders usable. They're light in the hand, too, and plenty strong.

You can take your pick of dozens of Continental proprietary cans with all sorts of dispensing closures. Our designers are masters at giving these sturdy packages sales-winning appeal; our lithography makes them sing. For the full story, just give us a call.

CONTINENTAL CAN COMPANY

CONTINENTAL CAN BUILDING • 100 East 42nd Street, New York 17, N. Y.

EASTERN DIVISION
100 E. 42nd St., New York 17

CENTRAL DIVISION
135 So. La Salle St., Chicago 3

PACIFIC DIVISION
Russ Building, San Francisco 4

the doll is a cake of baby soap, a can of baby powder and a Johnson & Johnson booklet on baby skin care. Harriet Hubbard Ayer has a doll promotion which includes a make-up kit. The Ideal Toy Corporation of New York has been organizing these promotions which will get a great deal of coordinated advertising in store displays.

Samples

Campus Pac, a book style toiletry sample kit is a new variation of the guest book, a sample kit that has been distributed to hotels. Campus Pac is going to be passed out to 40,000 young college students and the participating manufacturers in this sampling idea will receive the names and addresses of these students.

A Bag Is a Bag

According to purchasing agents, what this country needs is a standard language. For instance, according to one buyer at a recent convention, a bag is a gunny sack in Chicago, a burlap bag in New York and tow sack in New Orleans. This buyer thinks a bag should be a bag in every market and that this way of talking and writing and specifying should also apply to many other commodities which have different local trade designations.

Not Only Glass

The glass container industry has been working with users of glass containers to establish quality control on a statistical basis. A number of glass users have negotiated agreements with glass companies as to acceptance of sampling.

According to Dr. J. H. Toulouse of the Owens-Illinois Glass Company, "The consumer effect of minor visual imperfections has been highly overemphasized. The glass container industry is committed to the ideal of producing a product which is as free as possible from critical and major imperfections, but to produce a product equally free from minor visual imperfections is a matter of so great a cost in inspection, moulds, furnaces and other equipment that it results in a greatly increased operating cost."

Impulse Questions

Some branches of the food trade are not at all sure which position in the grocery store is the most favorable for impulse sales. Cake bakers, for instance, have always fought for a spot near the check-out and right beside the spot where bread is traditionally sold. Now some of the members of the bakery industry are convinced that a position with the kind of merchandise which has an associated sales idea for cake may be better than the traditionally accepted hot spot. These people think that when a woman is in that part of the store where dessert items are on display, she may be more open to suggestion for an impulse purchase of cake than she would be even near the cash register.

The impulse sale must represent a high degree of conflict in the woman's mind. This conflict must be intensified as the margin for spending over and above necessities becomes narrower. It could very easily be that the multitude of impressions which meet the eye in every part of the self-service store would exhaust this margin for impulse spending for everything except staples like bread, long before the customer reaches the check-out counter. It may easily be that for some products a position among associated products, that is in a section where the customer's mind is apt to be made up on a general field of products, will have a greater impulse to what has up to now been considered important solely because of the visual or convenient location.

Net of Sales for Advertising

The percentage of net sales spent for advertising will exceed that of 1951 by 0.3 per cent. This means that the money spent for advertising this year will be 2.55 per cent of sales as compared with 2.25 per cent last year. These figures were shown in the results of a survey by the Association of National Advertisers.

Still Increasing

In 1940 only 26 per cent of U. S. grocery store business moved through the self-service store. Today self-service accounts for 70 per cent of the business. These stores have been growing bigger and fewer and today the self-service store averages $482,000 per year compared to an annual business of $78,200 in 1940.

Increasing floor space is becoming a serious cost factor in the self-service grocery store. Within the last few years these stores have added frozen foods, bakery and self-service meat departments as well as a wide variety of non-food items.

Sales of non-foods in food stores have been mounting so rapidly that grocery products are being squeezed for shelf positions and will probably be squeezed even harder in the future.

These figures were made public by Arthur C. Nielsen at the recent meeting of the Grocery Manufacturers of America.

Selling N. Y.

If you are interested in selling the metropolitan New York market, particularly through every branch of the food distributing trade, you will be interested in a booklet now available from B. Meier & Son, Inc., 209 Bronx Terminal Market Building, New York 51.

According to this booklet *So, you want to sell New York* there are more than 35,000 food outlets in this big metropolitan market which includes 17 counties in three states and over 14,000,000 people.

DAY RO-BALL SIFTERS

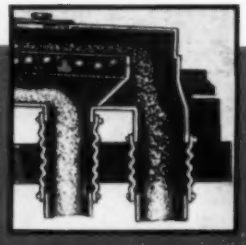
....Protect Product Quality

You can meet the highest standards of quality and assure yourself of economical, trouble-free operation with DAY RO-BALL SIFTERS for all scalping and sifting.

You get thorough separation of overs and thrus plus matchless accuracy in maintaining particle size because DAY RO-BALL SIFTERS employ the exclusive Super-Active Ball Cleaning Device.

Scores of rebound points on the mesh retainer screen insure even distribution of vibration over the entire screening surface. Result . . . the screen stays clean and free passage of through material is guaranteed.

Only DAY can offer this time-tested assurance of top performance. Learn the details . . . write today for free folder.



DAY Super-Active Ball Cleaning keeps the screen clean and assures passage of through material.

DAY

THE J. H. DAY COMPANY, CINCINNATI 22, OHIO

INCORPORATED • FOUNDED 1887

Eli Lilly is now marketing Erythromycin under the trade-mark of Ilotycin. Abbott is distributing the same product under the trade-mark of Erythrocin, and Upjohn will soon announce the antibiotic under their own name.

The product is effective against organisms which have developed resistance to penicillin and other antibiotics.

Schenley Laboratories have prepared Crephex, a combination of calcium cresol sulfonate, ephedrine sulfate, and pyrilamine maleate, for the control of coughs.

The Warwick Wax Co. has announced the availability of Warcosine, a new superior white ceresine-type wax. It is produced by the Cooperative Refinery Association, Coffeyville, Kansas. Warcosine is obtained from the solvent extraction of selected crude waxes and combines some of the characteristics of fully refined paraffin with highest quality plastic micro waxes.

Parke, Davis is distributing four new products: Caladryl Cream, which provides relief of burning and itching associated with light sunburn, diaper and cosmetic rashes, hives, mild poison oak, and similar conditions; Theelandrol, a combined estrogen-androgen preparation for intramuscular use which is indicated for the relief of climacteric symptoms in patients of either sex; Myadex capsules, containing nine vitamins and 11 minerals for nutritional supplementation; and Menagen with Methyltestosterone, in oral form, also for use in the treatment of symptoms in the male and female climacteric.

Chilcott Laboratories has announced a 20 to 25 per cent reduction in the wholesale list price of Methium, the hypotensive agent in tablet form.

White Laboratories has prepared two new products. A-P-Cillin, for acute upper respiratory infections, including the common cold. It combines the effectiveness of aspirin-phenacetin-caffeine mixtures with the antiallergic and sedative properties of an antihistaminic (phenyltoloxamine) plus the antibacterial action of penicillin.

Guaiatussin, a cough syrup containing glyceryl guaiacolate, an efficient and potent expectorant, and phenyltoloxamine.

The Wm. S. Merrell Co. has added a new package size to its Thera-Concemin Therapeutic vitamin capsules—a 100-capsule bottle. The product supplies the essential fat-and-water-soluble vitamins in therapeutic amounts adequate to restore the normal tissue levels of these essential vitamins.

Bristol Laboratories has released two new products: Brissapen Tablets, for the relief of symptoms and prevention of complications of the common cold and other acute upper respiratory infections, and Cillorets, for the treatment of certain throat, mouth and dental infections which are immune to attack by either antibiotic alone. The tablets contain Phenyltoloxamine dihydrogen citrate, Procaine penicillin G, acetylsalicylic acid, phenacetin and caffeine. The Cillorets contain a penicillin-bacitracin combination in hard-candy troche form.

The Harrower Laboratory has produced a new liquid form of its mucin antacid, Mucotin, which was formerly available only in tablet form. It is valued in peptic ulcer therapy for prompt relief of symptoms, rapid healing and low incidence of recurrence.

The House of "4711" has introduced La Ronda Oil of Cologne, packaged in a 3-ounce bottle and selling for $1.25 plus tax.

Helene Curtis Industries, Inc. has added a new six-ounce size to the Suave line. The coral Millsplastic bottle, made by Elmer E. Mills Corp., is packaged in gold foil cardboard and acetate display cartons.

Heyden Chemical Corp. has introduced Pro-Gro, a more flexible type of antibiotic feed supplement in concentrated form, said to be the first custom-made one to meet the specialized formulation needs of suppliers of animal feed supplements. It consists of 80 per cent high-potency crystalline procaine penicillin G and a 20 per cent diluent. There is a choice of diluents available.

Eaton Laboratories has announced a new dosage form of Furacin Soluble Powder, which contains 0.2 per cent Furacin dissolved in Carbowax 6000. It is a soft, cream-colored, completely water-soluble powder for use in surface bacterial infections, as in wounds, external otitis and vaginitis, where medication in powder form facilitates application.

Doings (CONTINUED)

Squibb has announced the availability of Nydrazid Injection (Squibb Isoniazid), the first injectable form of the new anti-tuberculosis agent.

The National Drug Co. has added Sulfonal with Penicillin to its line of ethical pharmaceutical preparations. The product is effective in the treatment of pneumonia, bronchitis, tonsillitis, quinsy, and other conditions. Each fluid-ounce contains 600,000 units of Penicillin G Potassium and 1 gram each of sulfadiazine, sulfamerazine and sulfamethazine.

Lederle has placed two new oral forms of aureomycin on the market, one, a tasteless liquid, and the others, a lime-favored syrup—Aureomycin Calcium Oral Drops and Aureomycin Calcium Syrup, respectively.

Abbott has announced three new products: Bevidox Crystalline Sterile Solution, which provides massive dosages of vitamin B_{12}, 1000 mcg. per cc., for treatment of pernicious anemia in relapse and several types of neurological disease; and Sulestrex Piperazine Elixir, which provides maximum effectiveness in the treatment of the menopausal syndrome (a 5-cc. teaspoonful contains 1.5 mg. of piperazine estrone sulfate.

Abbott has prepared a new formula; Penicillin G Procaine in Aqueous Suspension (3,000,000 units), which provides crystalline procaine salt of penicillin G combined with a small amount of harmless suspending and dispersing agents in a form which "breaks" quickly from the walls of the silicone-treated vial.

Parke, Davis is distributing Benadryl with Hyoscine, a new combination of drugs for the prevention of sea, air and carsickness. Each tablet contains 25 mg. of benadryl and .325 mg. of hyoscine, the usual dosage being one tablet about a half an hour before departure and one every four hours thereafter.

Helene Curtis is introducing a new hair care product, Helene Curtis Conditioning Creme Rinse with Lanolin. When used after a shampoo, it gives the hair lustre, and leaves it soft, smooth and free from snarls.

Armour has prepared Thyrar, whole gland thyroid extract, which is indicated in all conditions where ordinary thyroid hormone is useful. It is said to be a more uniform product with less inert material, tasteless, and a standardized equivalent to thyroid U.S.P., requiring no dosage change.

Nestle-LeMur Co. has announced that Djer-Kiss Talcum Powder with deodorant chlorophyll added will be packaged in the same pink and green can as the regular Djer-Kiss talcum but will have a special green and gold band to distinguish it. It had formerly been packaged in a green and white mottled can.

Smith, Kline & French Laboratories have introduced Drilozets, new antibiotic-anesthetic lozenges. They contain anti-gram-positive gramicidin and anti-gram-negative polymyxin. Combined with this antibacterial action is Quotane, S.K.F.'s virtually non-sensitizing topical anesthetic. They are useful for the relief of sore throats associated with coughs, colds and other respiratory infections or trauma.

Helena Rubinstein has created a new formula that embodies the youth-giving elements of estrogenic hormones with the glamor of Silk-Tone, called Silk-Tone Special. It contains 6,000 units of natural Estrogenic Hormones to each ounce. The formula is available in six shades, Peachbloom, Rachel, Mauresque, Crackerjack, Rose Beige, and Bronze.

Schering Corp. is distributing Prantal Methylsulfate Repeat Action Tablets which are used in peptic ulcer and other conditions associated with hyperacidity or hypermotility of the stomach. Its advantages include specificity of action, relative freedom from unwanted side actions, avoidance of bitter taste, and longer duration of action.

Marcelle Pharmaceuticals has released Dermabase, a new, all-purpose ointment base. It is a fully formed cream ready for use; greaseless and non-staining; readily miscible with both oil-soluble and water-soluble drugs; and will take up to 500 per cent additional water.

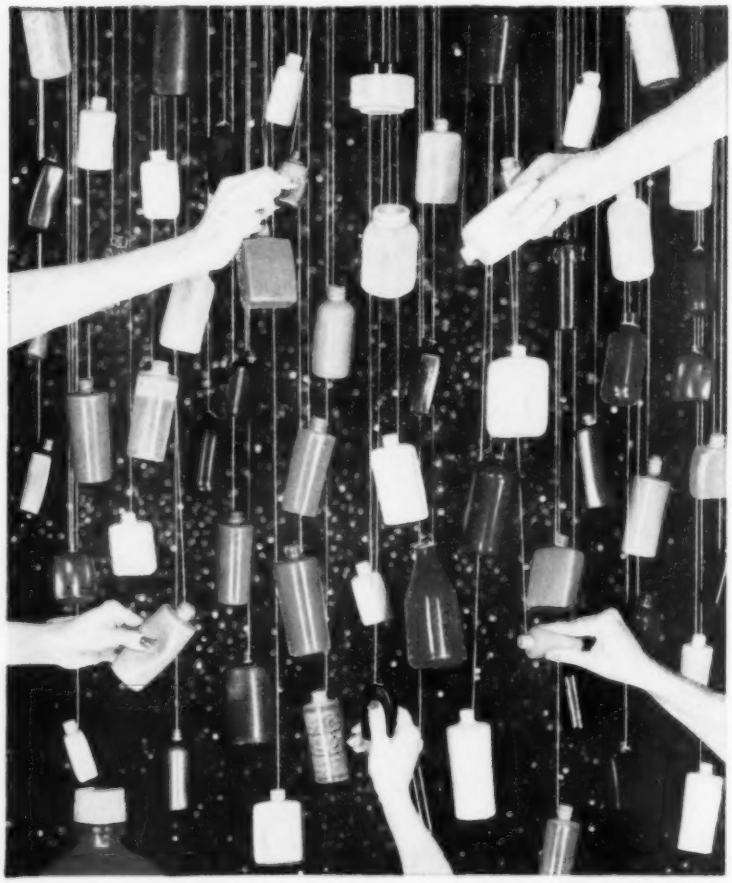
Parke, Davis has announced Natabec, a new vitamin mineral supplement especially adapted to aid in achieving optimum nutrition during pregnancy and lactation. One Kapseal supplies calcium, phosphorus, vitamins B_{12}, B_6, folic acid, nicotinamide, Synkamin (vitamin K), and rutin, with the minimum daily requirements or more of iron and of vitamins A, B_1, B_2, C and D.

Nysco Laboratories has developed a new type of B_{12} U.S.P. crystalline tablet for pediatric use, which is very palatable and can be put into infants' feeding without crushing. Each tablet contains 5 micrograms of pure crystalline vitamin B_{12} and weighs 1/3 of a grain in all.

Holiday Greetings

HAZEL-ATLAS GLASS COMPANY

develop your "counter-punch" with Plaxpak bottles



As sales records demonstrate —products develop sales momentum quickly when they're packaged in the Plaxpak polyethylene bottle. Offering new vitality in color appeal, this package gives your product sales punch at the counter. Then, as a follow-through for repeat sales, it provides the blessings of light weight and unbreakability plus the convenience of squeeze dispensing.

Full range of colors and sizes in stock shapes make it easy to obtain the Plaxpak bottle best suited to your product requirements.

With our smart and varied stock shapes you can package distinctively in the Plaxpak bottle at minimum expense. Or a unique, custom shape can be produced.

PLAX CORPORATION

Subsidiary of Emhart Mfg. Co.

WEST HARTFORD, CONNECTICUT

In Canada: Plax Canada, Limited, Toronto ——— District Sales Offices: New York, Chicago and other principal cities.
Plax® blow-molded products made under U.S. Pats.: 2128239, 2175053, 2175054, 2230188, 2230190, 2260750, 2293751, 2349176, 2349177, 2349178.

News...

DCAT Conference

The past chairmen of the Drug, Chemical and Allied Trades Section of the New York Board of Trade met at the Drug & Chemical Club on November 12, at which time Lloyd I. Volckening, president of the Ivers-Lee Co., and current DCAT chairman, created a special advisory committee to help guide the future course of the organization. This committee is composed of all the past chairmen.

Past chairmen who were present at the meeting were: S. Barksdale Penick, Sr., chairman of the board, S. B. Penick & Co. (DCAT chairman from 1927-28); Joseph A. Huisking, vice-president, Fritzsche Brothers, Inc. (1937); J. J. Toohy, vice-president, E. R. Squibb & Sons (1941); S. B. Penick, Jr., president, S. B. Penick (1942); Harold M. Altshul, president, Ketchum & Co. (1946); Carle M. Bigelow, director, pharmaceutical department, of Calco Chemical division, American Cyanamid Co. (1947) Fred J. Stock, assistant to the director, drug and pharmaceutical division, Mathieson Chemical Corp. (1948); Robert B. Magnus, vice - president, Magnus, Mabee & Reynard, Inc. (1949); Harold C. Green, national accounts executive, L. Sonneborn Sons, Inc. (1950); Charles P. Walker, Jr., director and general sales manager of Chas. Pfizer & Co. (1951); and Charles M. Macauley, Charles M. Macauley & Associates (1952).

Two honorary members of the executive committee were also present—Carl M. Anderson, vice-president, Merck (North America) Inc., and James DeCesare, president, White Laboratories, Inc.

Mr. Volckening, DCAT chairman; Stanley I. Clark, vice-president of Sterling Drug Inc., DCAT vice-chairman; and Helen L. Booth, secretary, acted as hosts at the gathering.

Former chairmen who will be on the committee but were unable to attend this meeting, are: William D. Barry, vice-president, Mallinckrodt Chemical Works (1939); James C. Chilcott, president, Chilcott Laboratories (1936); Philip M. Dinkins, president, Jefferson Chemical Co. (1938); Charles L. Huisking, president, Charles L. Huisking & Co. (1925-26); Percy C. Magnus, president, Magnus, Mabee & Reynard (1931-32); E. T. T. Williams, president, the Lambert Co. (1944); and V. E. Williams, director of sales, organic chemical division, Monsanto Chemical Co. (1943).

All past chairmen were also made permanent members of the Honor Guest Committee for the Section's annual March dinner.

LLOYD I. VOLCKENING

JOSEPH KEHO

Elected to Lehn & Fink Board

Joseph Keho and Paul Carey have been elected to the board of directors of Lehn & Fink Products Corp., according to Edward Plaut, president. Mr. Keho is president of Dorothy Gray, Ltd., a Lehn & Fink subsidiary, and Mr. Carey is general manager of the Tussy Cosmetiques division of the firm.

Upjohn Appointments

Dr. R. H. Levin has been appointed head of the chemistry department of the Upjohn Co.'s research division and Dr. D. I. Weisblat has been named assistant director of research, according to Dr. R. S. Schreiber, director of research. Dr. H. F. Hailman has been appointed director of the department of clinical investigation of the Medical division, according to Dr. E. L. Burbidge, medical director.

Merck Fellowships

Merck Senior Postdoctoral Fellowships in the Natural Sciences for 1953-54 were available through the 10th of this month, according to the National Research Council, Washington, D. C. All fields of physics, chemistry and biology, plus the preclinical medical sciences, are open to applicants.

These Fellowships carry stipends of $6,000 and traveling expenses and are offered to citizens of the United States with a Ph.D. equivalent in physics, chemistry, or biology. Candidates must also have at least three years of postdoctoral professional experience in their major field, only one of which may have been fellowship work. Applications filed with the Council had to be postmarked on or before December 10, 1952.

The Fellowships will be awarded in the late winter or early spring, with the tenure of the one-year appointments beginning at any approved date between July 1 and October 1, 1953.

PAUL CAREY

Pitman-Moore Appointments

Dr. Alfred H. Brueckner, associate director of the biologic laboratories of Pitman-Moore Co., since 1947, has been promoted to assistant director in charge of biological product development, and Albert C. Brethauer, officer manager, has been named business manager of the Zionsville plant, according to K. F. Vanentine, president.

Plans New Detroit Sales Branch

Parke, Davis & Co. has purchased a tract of land for the contemplated construction of a new Detroit regional sales branch, separate from the main administrative offices and laboratories, according to Herbert B. Duncan, Detroit branch manager. The tract is located in the east section of Detroit at East Jefferson Ave. and Adair St.

LOTION . . . *smooth but not greasy*

with

Methocel

a

superior thickener

Methocel (Dow methylcellulose), N. F. Grade, offers many advantages in the preparation of superior hand lotions. As a thickener, Methocel imparts a pleasant smoothness to the product, without any uncomfortable stickiness. It is valuable as a film former, binder and suspending agent.

Methocel is neutral, bland, inert, and non-allergenic. It is completely water soluble and may be diluted with alcohol in properly prepared solutions.

Methocel is used by the cosmetic and drug industries in the preparation of hand and face creams, leg make-up, ointments, drug carrying films, surgical jellies, tablets, bulk laxatives, and in preparing emulsions of fatty, mineral and essential oils.

Investigate Methocel—send for information on its present and potential uses.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

Did you get your Experimental Sample?

The Dow Chemical Company
Department ME 21A • Midland, Michigan
Wide viscosity range of Methocel available—please indicate use field _____

NAME _____ TITLE _____
FIRM _____
ADDRESS _____
CITY _____ STATE _____

DOW CHEMICALS

D&O National Sales Meeting

Dodge & Olcott, Inc. held a national sales meeting at the Hotel New Yorker from October 29 through the 31, with all New York and branch offices sales personnel attending, as well as officers and department heads.

Speakers included the late J.F. Rudolph, president; Val H. Fischer, vice-president, who discussed current markets and trends; and Paul Sperry, Sales manager. Flavors were discussed by C. Johnstone and F. Schumm of the flavor department; aromatic chemicals by C. Olsen; perfumes, by B. Houk, H. Kainik and J. Kiehl; advertising by Mrs. Ruth Farnworth; and essential oil standards by Dr. A. Warren. Other speakers were F. Kirn, treasurer, and R. V. Behrens, comptroller.

The sales personnel present included C. O. Homan, vice-president in charge of sales; Paul Sperry, sales manager; Nate Fretz, Eddie Spellman, Neil Grace and Fred Perrone of the New York office; George Collins and Harold Bachmann of St. Louis; Ken Hartley and Bill Arko, Chicago; Ed Wyluda, Boston; Joe Fortescue and Al Birsner, Philadelphia; Earl Kersten, Atlanta; Chet Smith, Los Angeles; Frank Murdock, San Francisco; Tommy Callahan, Cincinnati; and Bill Peacock, Baltimore.

Officers and sales personnel at Dodge & Olcott national sales meeting held Oct. 29 to 31 at Hotel New Yorker. Left to right, first row: Harold Bachmann, St. Louis; V. H. Fischer, vice-president; the late J. F. Rudolph, president; and C. O. Homan, vice-president. Second row: Bill Peacock, Baltimore; Fred Perrone, New York; Paul Sperry, sales manager; and Earl Kersten, Atlanta. Third row: Tom Callahan, Cincinnati; Ken Hartley, Chicago; Neil Grace, New York; Ed Wyluda, Boston; and George Collins, St. Louis. Last row: Nate Fretz, New York; Joe Fortescue, Philadelphia; Chet Smith, Los Angeles; Ed Spellman, New York; Bill Arko, Chicago; and Frank Murdock, San Francisco.

Miller Heads Toni Advertising

Wilmore H. Miller, vice-president of the Toni division of the Gillette Co., has been named to head Toni's advertising and brand promotion departments, according to R. N. W. Harris, president. Mr. Miller will be responsible for advertising, brand promotion and market and consumer research.

Fred Willis, director of market research, will be responsible for creative advertising and media research, working directly under Mr. Miller.

WILMORE H. MILLER

Wyandotte Promotions

C. F. Sanborn has been promoted to manager of sales research and control; F. M. Zorn, to manager of order and scheduling department; and M. D. Thompson, to assistant director of traffic, according to Bert Cremers, vice-president of Michigan Alkali division, Wyandotte Chemicals Corp.

Woodruff Appointed by Merck

Dr. H. Boyd Woodruff has been appointed director of the microbiological research department of Merck & Co., succeeding J. C. Woodruff who recently retired.

Sanders Named Innis, Speiden V.P.

Malcolm D. Sanders has become executive vice-president of Innis Speiden & Co., Inc., according to M. H. McAllister, president, and will be responsible for the sales program of the company. He had previously been assistant to the president of Berkshire Chemicals, Inc., and its affiliated company, the Hamilton Laboratories, Inc.

MALCOLM D. SANDERS

Merck (N.A.) Trade Name O.K.'d

Reversing a lower court's decision, the Supreme Court of Mexico has upheld the findings of the Mexican Patent Office that the trade name, Merck (North America) Inc., does not infringe the trade name, Merck-Mexico, S.A.

This decision is a final conclusion to the trade name infringement case brought against Merck (North America) Inc., export subsidiary of Merck & Co., Inc., by Merck-Mexico, S.A., a former German-owned firm now controlled by the Mexican Government.

According to Mexican law, the case may not be further appealed, and the decision of the Supreme Court is considered final.

Receive Service Awards

About 225 employees of the L. Sonneborn Sons, Inc. Daugherty Refinery in Petrolia, Pa., who have been employed more than ten years, were guests at a recent service award banquet held in Butler, Pa. An additional 50 employees were eligible but were needed at the refinery to maintain its operation.

The Daugherty Refinery has operated around the clock since its purchase by Sonneborn in 1904.

To Enlarge Capsule Facilities

The Arner Co. is doubling its medical capsulating facilities as part of its over-all expansion of production facilities. The increased output of the hard-shelled, two-piece capsules containing such medicaments as antibiotics, analgesics and sedatives is expected to begin by the end of the month.

Our N-30 line of machine made, flint glass bottles is made up of 9 sizes ranging from 1/8 ounce to 8 ounces. They can be supplied plain or decorated to your specifications with fired-on ceramic labels.

CARR-LOWREY GLASS CO.

Designers and manufacturers of fine glass containers

Factory and Main Office: BALTIMORE 3, MD. • New York Office: 40 W. FORTIETH ST. • Chicago Office: 1572 MERCHANDISE MART

Foragers' 56th Annual Banquet

The Foragers of America are getting ready to honor fifteen 25-year members at their 56th annual banquet at the New York Athletic Club on Friday evening, January 9, 1953. Thomas A. Gladding, president, and his committee are making all the arrangements for the party.

Steve Mayham, secretary of the Toilet Goods Association, will be the guest speaker. The fourteen honored guests will be Frederick Anderson, R. S. Arcularius, Jack Brennan, Aaron Chisholm, William F. Denny, Jr., William M. Neilson, Dick Powell, Hugh Finn, Bob Searles, Jack Wilde, C. R. Keeley, James W. Doherty, Jr., William Kilcullen, Bob de Laney and Jack Curry, President, Ogilvie Sisters,

Owens-Ill. Executive Changes

Smith L. Rairdon, vice-president and division general sales manager, Owens-Illinois Glass Co., has been named vice-president and director of marketing, a newly-created position in which he will coordinate all of the company's marketing activities. He will be succeeded in his former position by Sidney F. Davis, manager of food industries sales.

C. G. Bensinger, vice-president and general manager of the Pacific Coast division, will be transferred to the general offices in Toledo as general manager of the glass container division. He will succeed Henry S. Wade who has been appointed vice-president and general manager of the Pacific Coast division, in charge of all of the company's West Coast operations.

George S. Babcock, manager of the closure and plastics divisions, was elected a vice-president of the company, and Hugh C. Laughlin, vice-president and general manager of the administrative division, was elected executive vice-president and member of the board.

DCAT officers (seated) at Chemists' Club on November 19 during meeting with members of Trade press. Left to right, at table: George S. McMillan, vice-president, Bristol-Myers Co., vice-chairman, DCAT bulletin committee; Fred M. Schwemmer, vice-president, Ruthrauff & Ryan, Inc., chairman, bulletin committee; Lloyd I. Volckening, president, the Ivers Lee Co., DCAT chairman; Stanley I. Clark, vice-president, Sterling Drug Inc., vice-chairman; Helen L. Booth, secretary; and Helen Mattin, DCAT editorial assistant. Standing, left to right, are: J. Paul Folsom, general manager, Physicians Desk Reverence, Medical Economics; Thomas R. Farrell, editor, DRUG & COSMETIC INDUSTRY; Lee Klemmer, vice-president, Modern Medicine; Lester B. Pope, managing editor, Chemical Engineering; Arthur Kavaler, managing editor, Oil, Paint & Drug Reporter; Dr. Howard C. E. Johnson, managing editor, Chemical Week; Frank Reilly, editor, Soap & Sanitary Chemicals; and Harrison S. Fraker, president, Topics Publishing Co.

Stock Appointed by Mathieson

Fred J. Stock has been appointed assistant to the director, drug and pharmaceutical division, according to Russell Hopkinson, vice-president of Mathieson Chemical Corp. He had formerly been general manager of the intermediates department of Mathieson, and prior to that, a director and vice-president in charge of sales of Chas. Pfizer & Co.

Wick Visits Kolmar-Europe

W. J. Wick, executive vice-president of Kolmar Laboratories, visited Kolmar-Europe in September. At that time he laid out an enlarged operation in the Paris factory of Kolmar-Europe, and also visited Switzerland.

Sheridan Named by Sheffield Farms

James D. Sheridan has been appointed sales manager of the chemical division of Sheffield Farms Co., Inc. He will be at the division's main business office, Norwich, N. Y.

Buckley Marks 50th Year with T&S

Edward S. Buckley, partner in Thurston & Braidich, observed his 50th year with the firm last month. Founded in 1856, the company is one of the oldest gum-importing firms in the country.

He was decorated by the French government for his work in promoting trade relations between the United States and France during the second world war. He is widely known in the vanilla bean industry and is a past president of the Vanilla Bean Association of America.

Huisking to Make Camphor Tablets

Chas. L. Huisking & Co., Inc. has completed arrangements with E. I. duPont de Nemours & Co. to take over the production of duPont Camphor Tablets which are now being manufactured at duPont's Chambers Works, Deepwater Point, N.J. The process and machinery has been purchased by Huisking and will be installed at their plant in Brooklyn, where production will begin soon.

DuPont's U.S.P. Camphor Powder and Tablets have been exclusively distributed by McKesson & Robbins, Inc., chemical division, and Chas. L. Huisking. This arrangement will continue.

Become Norda Representatives

Ken Rickard has been appointed Southern California manager of the Norda Essential Oil & Chemical Co., with headquarters at 28 East 11th Street, Los Angeles 23. Norda, at the same time, appointed the A. W. Horton Co. as its representative in Mexico and the Philippines.

Mr. Rickard has been with Dodge & Olcott for the past 15 years.

SMITH L. RAIRDON

SIDNEY F. DAVIS

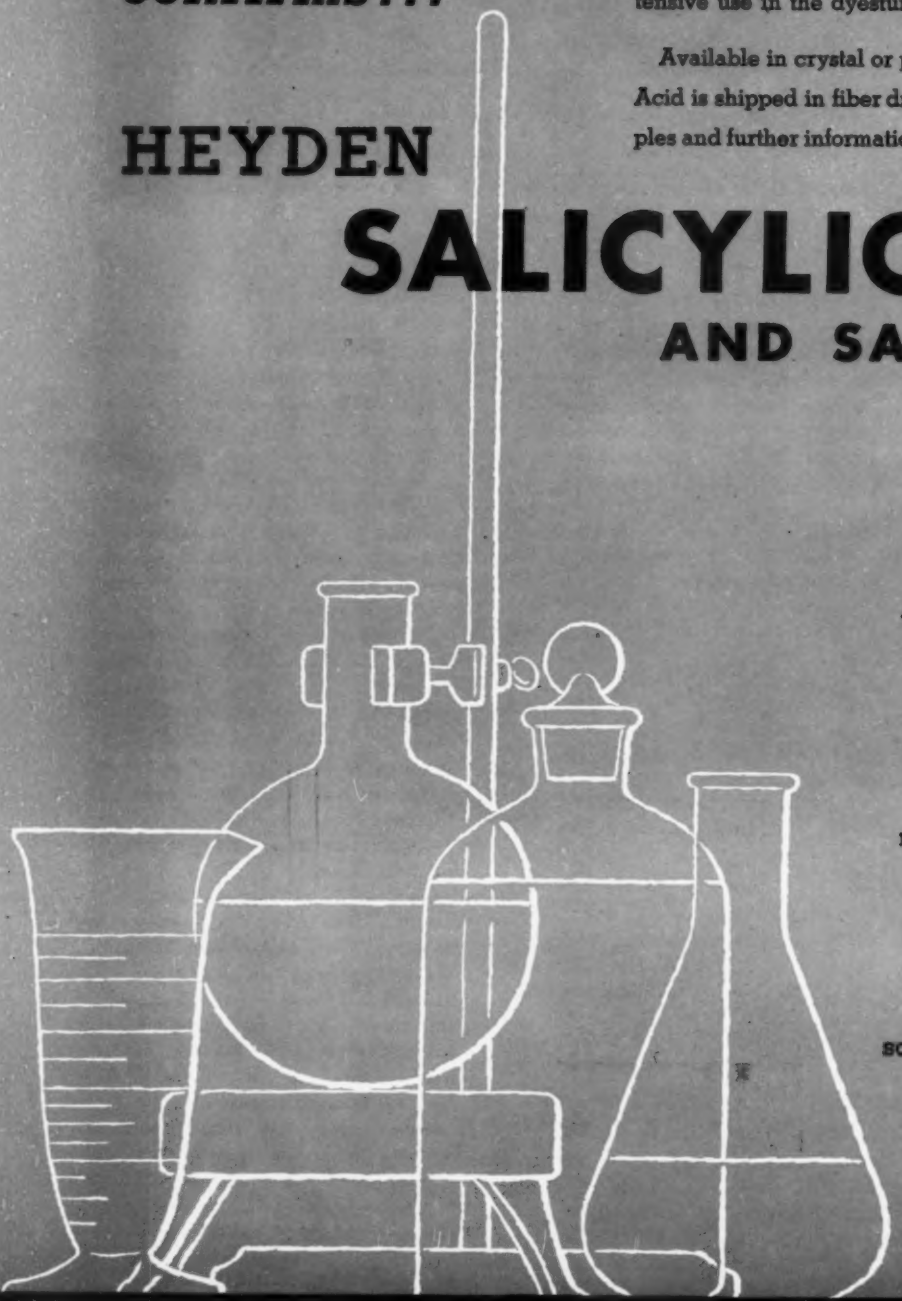
Experience confirms...

Heyden Salicylic Acid and its derivatives have always fulfilled the needs of the pharmaceutical and process industries for highest purity intermediates. The U.S.P. grades serve for manufacturing and also prescription purposes.

The technical grade of Heyden Salicylic Acid finds extensive use in the dyestuff, resin and rubber industries.

Available in crystal or powder form, Heyden Salicylic Acid is shipped in fiber drums of 25 to 225 lbs. net. Samples and further information will be mailed upon request.

HEYDEN SALICYLIC ACID AND SALICYLATES



FOR PRESCRIPTION AND MANUFACTURING USE

SODIUM SALICYLATE U. S. P.
Crystals, Flo Crystals or Powder

METHYL SALICYLATE U. S. P.
(Oil of Wintergreen, synthetic)

ACETYLSALICYLIC ACID U. S. P.
Crystals or Powder
(also Starch Granulations)

PHENYL SALICYLATE N. F.
(Salol)
Granular or Powder

AMMONIUM SALICYLATE N. F.
Crystals

CALCIUM SALICYLATE
Powder

LITHIUM SALICYLATE N. F. VIII
Powder

MAGNESIUM SALICYLATE
Powder

STRONTIUM SALICYLATE N. F.
Powder

SALICYLAMIDE

PARA-AMINOSALICYLIC ACID

SODIUM PARA-AMINOSALICYLATE

Serving Industry Through Finer Chemicals

BENZALDEHYDE • BENZOATES • BENZYL CHLORIDE
BROMIDES • CHLORINATED AROMATICS • CREOSOTES
FORMALDEHYDE • FORMIC ACID • GLYCEROPHOSPHATES
GUAIACOLS • HEXAMETHYLENETETRAMINE
MEDICINAL COLLOIDS • METHYLENE DISALICYLIC ACID
NEOMYCIN • PARAFORMALDEHYDE
PARAHYDROXYBENZOATES • PENICILLIN
PENTAERYTHRITOLS • PROPYL GALLATE • RESORCINOL
SALICYLATES • SALICYLIC ACID • STREPTOMYCIN

FINE HEYDEN CHEMICALS

HEYDEN CHEMICAL CORPORATION
342 MADISON AVENUE, NEW YORK 17, N.Y.
CHICAGO • PHILADELPHIA • SAN FRANCISCO • DETROIT • PROVIDENCE

Givaudan Cocktail Party

Givaudan-Delawanna, Inc. held its annual fall reception and cocktail party on November 12 at the University Club, New York. The party, which occurred during the visit of Andre Givaudan to this country, was attended by several hundred representatives of the perfume, cosmetic and allied industries.

Mr. Givaudan left New York for Paris and Geneva a few days after the reception.

Attending Givaudan-Delawanna cocktail party on November 12 are, left to right, Al Fiore, Research Assoc., Givaudan-Delawanna, Inc.; Andre Givaudan, L. Givaudan & Cie., J. Balsam, chief perfumer, and E. R. Durrer, executive vice-president, of Givaudan.

Colgate Promotions

R. E. Hilbrant, sales manager of the Toilet Goods division of the Colgate-Palmolive-Peet Co., has been elevated to the newly-created position of promotional and merchandising manager. He will be in charge of all planning, promotional and merchandising activities for the division.

C. G. Green, formerly assistant sales manager of the division, has been named field sales manager and will be in charge of all selling operations and sales personnel.

J. L. Bricker and R. G. Urban have been named assistant promotional and merchandising managers, reporting to Mr. Hilbrant.

H. A. Limbach has been promoted to assistant sales manager and will be in charge of the eastern and central divisions. M. C. Alverson, assistant sales manager, will be responsible for the southern and western divisions.

C. G. GREEN

R. E. HILBRANT

Maass Takes Radioisotope Course

Dr. Alfred R. Maass, research biochemist for Smith, Kline & French Laboratories, spent the first part of November in Oak Ridge, Tennessee, where he studied the techniques of using radioisotopes in biochemical research. He was one of 42 research workers enrolled in an advanced course offered from November 3 to 13 by the Special Training division of the Oak Ridge Institute of Nuclear Studies.

New Carbon Plant for Girdler

The Girdler Corp. has begun operation of a new plant for the production of activated carbon from hardwood char. The plant includes several new developments that are a part of a continuous process for the manufacture of several types of activated carbon.

Madsen, Breon Advg. Mgr.

Frederick G. Madsen has been appointed advertising manager of George A. Breon & Co., according to Graham Erdwurm, president. He will be in charge of preparing the firm's advertising material and its placement in medical, hospital and drug trade publications.

Briggs Heads Breon Sales Div.

William J. Briggs has been appointed regional manager in charge of sales in the Southwest for George A. Breon & Co., according to Frederick O. S. Spencer, vice-president in charge of sales. He will supervise sales of Breon medicinal products to doctors, hospitals, and the drug trade in New Mexico, Texas, Oklahoma, Arkansas and Louisiana. His headquarters will be at 2615 Mockingbird Lane, Dallas.

Lederle Sales Force Changes

K. R. Von Fritzinger has been promoted by Lederle Laboratories from assistant regional manager to regional manager of the northeastern region, with headquarters in Boston. He replaces H. W. McNevy who is now sales promotion manager in New York.

F. A. Frayser has been promoted from manager of the Columbus district, midwestern region, to assistant regional manager, northeastern region, replacing Mr. Von Fritzinger.

C. R. Kennedy, formerly assistant manager of the southern region, has been named northwestern regional manager in Chicago. He replaces Joseph C. Sheve, who is now head of the animal feed department in New York.

Maxwell James, manager of the Los Angeles district, is now assistant regional manager, southern region, replacing Mr. Kennedy. W. D. Stadler, manager of the San Bernardino district, has been transferred to the Los Angeles district. C. A. Perkins, medical representative of the Los Angeles district, has replaced Mr. Stadler. J. R. Brown, who has been manager of the Denver district, has become assistant manager of the Metropolitan New York region. J. K. Deay, medical representative, southwestern region, has been appointed manager of the Denver-Salt Lake City district, replacing J. R. Brown. Kermit Smith, manager of the San Francisco district, has become special representative to the Hawaiian Islands, and has been replaced by D. L. Thompson.

J. H. Schriever, formerly medical representative of the North Chicago district, has become manager of the newly-created Hudson Valley district, New York.

Bristol Promoted to Advg. Mgr.

Lee H. Bristol, Jr. has been promoted from assistant advertising manager to advertising manager by Bristol-Myers products division. He will continue to be responsible for Ammens Powder, Minit-Rub, Trushay and Trushay Hand Cream.

LEE H. BRISTOL, JR.

Harris with Edwal

Walter Harris has joined the engineering staff of the Edwal Laboratories and will be responsible for plant design and set-up.

New Lever Research Center

Lever Brothers Co. dedicated a new integrated research center at Edgewater, N. J. on November 18, when outstanding scientists, educators, industrial leaders and government officials inspected the laboratories and test rooms. A luncheon at the Waldorf Astoria Hotel followed, with Dr. J. R. Killian, Jr., president of the Massachusetts Institute of Technology, giving the principal talk.

The new research unit, according to Jervis J. Babb, president of Lever Brothers, climaxes company planning to bring under one roof the many developmental activities formerly located in company plants throughout the country.

The five operating departments of the Center are headed by Dr. L. B. Parsons director of the company's research and development division. The Center itself forms a part of Lever Brothers production operations under William H. Burkhart, production vice-president.

The staff of 300 includes biochemists, chemical engineers, bacteriologists, physicists, organic chemists, inorganic chemists, analytical chemists, physiologists, physical chemists, perfumers, pharmacists, food chemists, nutrition experts, dentists, beauticians, cosmeticians, dermatologists, toxicologists, pathologists, histologists and bakers.

Addis, Advg. V.P., Pepsodent

Ambrose J. Addis, formerly director of the Pepsodent Co. of Canada, Ltd., has been appointed advertising vice-president of the Pepsodent division of Lever Brothers Co., according to Charles T. Lipscomb, Jr., president.

AMBROSE J. ADDIS

Lilly Appointments

Earl Beck, formerly vice-president of industrial relations, has been appointed executive vice-president of operations by Eli Lilly & Co. He will be responsible for manufacturing, operations planning, development and control, and marketing. George L. Varnes has become general manager of the operations group, reporting to Mr. Beck.

Fred M. Hadley, formerly treasurer has become assistant executive vice-president. He has been succeeded as treasurer by J. O. Waymire who has served in the same capacity for the Lilly export affiliates. R. E. Westfall has been appointed secretary and treasurer of the affiliated companies.

Join Fritzsche 25-Yr. Club

The Quarter of a Century Club of Fritzsche Brothers, Inc. held its annual celebration on November 17 at the New York Athletic Club, during which time it welcomed six new members into its ranks.

Anna Fortsch, Christine Guy, Charles Esposito, Charles Grille, John McKeever and Dr. Edmund H. Hamann, the new members, were welcomed by officials of the company, headed by F. H. Leonhardt, president, and other active members.

Presentations and gifts from the board of directors and fellow employees had been made previously at private luncheons held during the year on the 25th anniversary of each new member.

A highlight of the evening was a preview showing of 1200 feet of colored motion pictures taken by Dr. Ernest Guenther during his recent six-month survey of European and African essential-oil production.

Of the 41 active Club members, 33 attended the celebration.

Phillips with Evans Research

Ralph F. Phillips has been appointed development manager of Evans Research and Development Corp., replacing S. F. Coneybear. He was formerly assistant scientific director of the Sugar Research Foundation, Inc.

Moves to New Address

Modern Art Printing Co., decorating specialists of polyethylene bottles, has moved to a new, modern plant at 34-36 56th St., Woodside 77, L.I., N.Y., owing to the necessity of expanding their facilities.

Front entrance of Lever Brothers' new research center, showing 5-story laboratory, right, and two-story pilot plant. Center will have 300 scientists and technicians.

She wants the best...

Empress molded closures give your product sales appeal...convenience.

The package says I'm It

To make your package speak for the quality of your product, it must be in complete harmony from top to bottom. The right closure is the finishing touch.

Owens-Illinois molded closures are not only colorful eye-catchers that help packages to stand out on any retail shelf or counter, they are delightful to use.

So if you want a package with personality—an efficient package that truly represents your product and keeps it up front in sales appeal, give it the sales plus of a *sales* minded closure.

CLOSURE DIVISION — **OWENS-ILLINOIS GLASS COMPANY**

TOLEDO 1, OHIO • BRANCHES IN PRINCIPAL CITIES

THE RIGHT OIL FOR YOU MUST HAVE . . . .

UNIFORMITY
STRENGTH
QUALITY

Thousands of buyers know that Exchange Oil of Orange meets these qualifications consistently. They know that rigid, day-to-day laboratory control, combined with years of experience as the leader in the citrus products field, guarantees that Exchange Oil of Orange will always meet their most critical specifications.

Distributed in the United States exclusively by

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Exchange

OIL OF ORANGE U.S.P.

SUNKIST GROWERS
PRODUCTS DEPARTMENT • ONTARIO, CALIFORNIA

PRODUCING PLANT:
The Exchange Orange Products Co., Ontario, Calif.

OSCAR KOLIN

Kolin Honored by Rubinstein

Oscar Kolin, vice-president in charge of sales for Helena Rubinstein, Inc., was honored with a surprise party marking his 25th year with the company. Given by Madame Helena Rubinstein at her penthouse apartment, 625 Park Ave., on November 17, the party was attended by 200 guests, including executives of the Rubinstein offices and factory, and several long-time employees flying in from California and other distant points expressly for the occasion.

These included Mr. and Mrs. Henry Rosen, in charge of the Pacific Coast branch; Henri Kolin, head of Helena Rubinstein in Canada; Anne Carlton and Netta Sturz, sales representatives; and Beulah Neibouhr, one of the training directors.

The employees presented Mr. Kolin with an 18-carat gold watch suitably inscribed, and a large painting for his home.

New Research Bldg. for Searle

The board of directors of G. D. Searle & Co. approved plans for the construction of a new $2 million research building at its regular quarterly meeting on November 15. The work will begin at once, with the building expected to be completed by August or September, 1953.

This unit represents Searle's sixth new post-war building and its second fully equipped new research laboratory. Facilities for Searle research will be more than tripled. The building will have three stories and full basement and will contain 100 complete two-man chemical laboratories, in addition to twelve private offices and added stockroom and storage accommodations. One unusual feature will be a connecting subterranean laboratory for high-pressure chemical reactions.

ROBERT L. RICE

Rice Appointed Sales Manager

Robert L. Rice has been appointed sales manager of the central division of the American Chlorophyll division of Strong Cobb & Co., Inc., according to M. M. Ricketts, vice-president and general manager. He will make his headquarters in Chicago. Mr. Rice was previously sales manager for Commercial Solvents Pharmaceuticals.

Address Aromatics Course

Frederick J. Triest, flavorist for Fries & Brothers; John Wenneis, technical director, Norda Essential Oil and Chemical Co.; Dr. Kurt Kulka, research chemist for Dodge & Olcott, Inc.; and Ernest Shiftan, perfumer of van Ameringen-Haebler, were guest speakers last month and early this month at the aromatics course offered by New York University's division of general education. Mr. Triest spoke on "Better Flavor Formulation;" Mr. Wenneis, on "Flavor Materials Related to Terpenes;" Dr. Kulka, on "Natural and Synthetic Flavor Aromatics;" and Mr. Shiftan, on "Progress in Perfumery."

The course, "Aromatics: Perfume and Flavor Evaluation and Blending," is taught by Samuel Klein, instructor at N.Y.U.'s division of general education.

ALPH B. PETERSON

Peterson Promoted by Pepsodent

Alph B. Peterson, merchandising manager for the Pepsodent division of Lever Brothers Co., has been promoted to the newly-formed position of merchandising vice-president for the division, according to Charles T. Lipscomb, Jr., president.

Cont. Can Wins "Oscar of Industry"

For the third consecutive year Continental Can Co. won the "Oscar of Industry" for its annual report which was chosen from five thousand reports in 100 different classifications. Second and third places in the food container category went to Owens-Illinois Glass Co. and American Can Co.

New Plant for Nat. Aniline

National Aniline division of Allied Chemical & Dye Corp. is starting construction of a new plant for the production of maleic anhydride and fumaric acid on its recently acquired plant site south of Moundsville, West Virginia.

F. J. Krueger, engineering manager, National Aniline division, will direct the new Moundsville project for which the Defense Production Administration has awarded a Certificate of Necessity covering 50 per cent of the cost of the facilities estimated at $4,500,000.

Architect's drawing of $2 million research building to be constructed for G. D. Searle & Co. Work will begin at once. Plans call for completion by next August or September.

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The dentifrice manufacturer enjoys a special trust that his customers place in his product. To remain faithful to that trust his product must be made of only the finest ingredients. Sturge Precipitated Calcium Carbonate U.S.P. is such a product. Its capacity to form stable dispersions in glycerine-water mixtures, its mild and controllable detergent action on teeth and, above all, its chemical inertness and physical harmlessness to tooth surfaces make Sturge P.C.C. a necessary raw material for the finest tooth pastes and powders. The producer, John & E. Sturge, Ltd., of Birmingham, England, will meet your special density requirements. Write today on your company letterhead for a sample and further information.

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Sampson Joins SKF Med. Staff

Dr. Martin C. Sampson, instructor of Medicine at the University of Pennsylvania School of Medicine, has joined the medical staff of Smith, Kline & French Laboratories.

Keene Appointed by Schering

John M. Keene, Jr. has been appointed assistant manager of the international division of Schering Corp., according to Dr. John N. McDonnell, vice-president. He will serve with W. H. Conzen, recently appointed head of Schering's expanding foreign sales activities.

JOHN M. KEENE, JR.

Armour Training School

The Armour Laboratories have established a large training school for sales representatives, as part of a plan for substantial expansion of its staff.

E. A. Coons, hitherto division manager in New York, has been transferred to Chicago to take charge of the school, which will be in the headquarters building at 520 North Michigan Ave. Courses for new men and refresher work for the present detailing staff will be included.

Robert J. Semple has been named New York division manager to succeed Mr. Coons. From his office at 154 West 14th St., New York, he will have charge of 19 states along the Eastern seaboard from Maine to Florida.

Amer. Subsidiary for V. Mane Fils

V. Mane Fils, Bar-Sur-Loup, France, essential oil firm, is establishing an American Subsidiary, Mane Fils Inc., with offices at 153 East 26th St., New York City. Andre Pisarro, executive vice-president of the subsidiary, will direct operations of the American company. V. Mane Fils, of which Eugene Mane is president, has its main factory in Var-Sur-Loup and several important distilleries in Barreme Hautes Alpes.

New factory of Polak & Schwarz now under construction in Teterboro, N. J., which offers much larger quarters and faster shipping service, as part of company's expansion program.

P & S Readies New Factory

Polak & Schwarz, Inc. has completed its new factory in Teterboro, N. J., where it will have much larger quarters and a faster shipping service. The old factory in Guttenberg, N. J., will be maintained as a supplementary plant and warehouse.

For the present, sales headquarters will remain in New York City with branches in Chicago, Detroit, Milwaukee, Los Angeles and Toronto.

Abbott Sales Changes

Earl A. Clauson, Nebraska district sales manager for Abbott Laboratories, has been transferred to district sales manager of the Chicago district, according to H. S. Wilkinson, sales director. He has been succeeded in Nebraska by Paul B. McKibben, formerly medical service representative at Lincoln.

Pace With Schering

William H. Pace has been appointed chief engineer of Schering Corp., according to Robert E. Waterman, vice-president. He had formerly been process and equipment engineer of William R. Warner & Co.

Nugent, V.P., Ernst Bischoff

Richard F. Nugent has been appointed vice-president of Ernst Bischoff Co., Inc., according to H. G. Terwilliger, president, and will be in general charge of promotion, sales and advertising. He had previously been director of purchases and production and member of the board of directors of the Ortho Pharmaceutical Corp.

Italian Firm Desires U. S. Rep.

I.N.C.A., Via E. Ferrario, 7, Sede Milano, Italy, manufacturers of lipsticks, all modern cosmetics and their containers, is desirous of contacting American firms willing to represent them for the sale of their products in the United States market.

JOSEPH F. RUDOLPH

Joseph F. Rudolph

Joseph F. Rudolph, president of Dodge & Olcott, Inc., died November 23 after a short illness. He was 55 years old. He began his business career in 1914 at the old Columbus Distilling Co., Greenpoint, Brooklyn, a subsidiary of U.S. Industrial Chemicals, Inc. He later became district sales manager in Detroit, Philadelphia and Chicago for U.S.I., before becoming Dodge & Olcott president in 1948.

Surviving are his wife, Mrs. Ruth Hopper Rudolph, and a brother, August A. Rudolph.

Aaron C. Horn

Aaron C. Horn, chairman of the executive committee of the Sun Chemical Corp., died November 26 in New York. He was 76 years old. He established his own concern when he was 21. Following the merger of Sun Chemical, in 1945, with the A. C. Horn Co., of which he was president, Mr. Horn became chairman of the executive committee.

Dr. C. O. Ewing

Dr. C. O. Ewing, head of the laboratories of the Rexall Drug Co. in St. Louis, and active in the work of the Combined Pharmaceutical Contact Committee for many years, died suddenly in Columbus, Ohio, on November 15. He had gone to attend a football game.

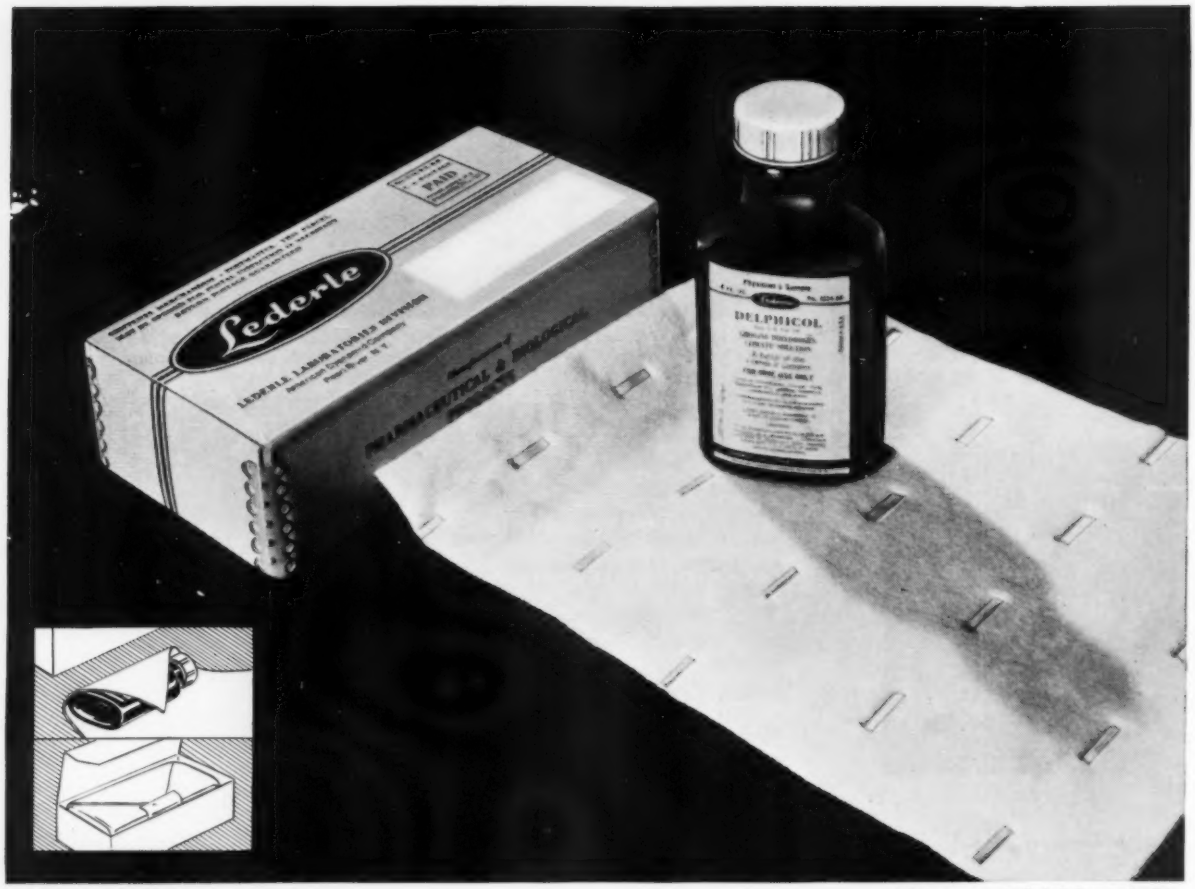

Photo courtesy Lederle Laboratories Div., American Cyanamid

Custom Protection

—the safe, smart way to package pharmaceuticals

Do you know how easy it is to prevent damage in transit—speed up packaging operations—and reduce shipping costs? You *will* know—when you try Kimberly-Clark Interior Packaging—KIMPAK*—a modern packaging material of unlimited versatility that provides *custom protection* for every type of pharmaceutical product. KIMPAK is especially suited for mailing liquid samples, since it will absorb up to 16 times its own weight in liquids within 30 seconds. KIMPAK is suggested in the Official Postal Guide not only for its absorbent qualities, but because it acts as a *cushioning* agent as well. It protects the most delicate products against damage in transit from shock, vibration and rough handling, yet is light enough to offset recent rate increases. KIMPAK is clean, soft and sanitary—as easy to apply as wrapping paper. And it's available in a wide variety of roll and sheet dimensions, in various thicknesses, with and without backing—to suit your specific need in the custom packaging of any type of pharmaceutical product. For complete information, write to Dept. **J-12,** Kimberly-Clark Corporation, Neenah, Wisconsin.

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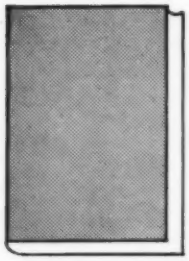
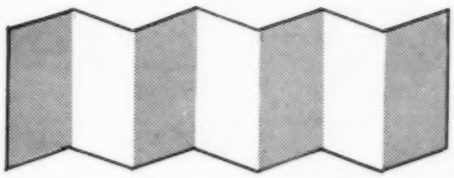
A Product of Kimberly-Clark

*T. M. REG. U. S. & FOREIGN COUNTRIES



Trade Literature



What's New in Laboratory

Scientific Glass Apparatus Co., Bloomfield, N. J. has issued the sixteenth edition of What's New for the Laboratory. This 16-page booklet contains 27 items of interest to those who want the latest apparatus for their laboratories.

Calco Sulfa Drug Booklet

Calco Chemical Division, American Cyanamid Company, Bound Brook, N. J., has issued Technical Bulletin No. 731, being a 44-page booklet on Evaluation of Sulfa Drugs, with Data on the Sulfapyrimidines, Sulfasoxazole, Sulfadimetine, and Sulfacetamide, by Harold J. White.

Calco has also issued Bulletin No. 57, a single page release on *In Vitro* Testing of Sulfas; and a reprint of Observations on the Solubility of Certain Sulfonamides, by Alfred R. Biamonte and George H. Schneller.

Reagent Acid Data Bulletins

Five new product data bulletins on reagent grade acetic, hydrochloric, nitric, and sulfuric acids, also ammonium hydroxide, are available from J. T. Baker Chemical Company, Phillipsburg, N. J.

Booklet Describes Parke, Davis

A new booklet graphically describing research, development, and manufacturing operations of a modern pharmaceutical firm has been published by Parke, Davis & Company. Original pictures taken for the booklet show phases of Parke-Davis research and manufacturing never before photographed for public release.

Polak & Schwarz Issues Reprint

The research department of Polak & Schwarz, Hilversum-Holland has issued reprints of A New Synthesis of Aryl-Aliphatic Alcohols, V. The structure of the compound $C_{18}H_{19}O$.

The Story of Licorice

The Story of Licorice, said to be the first comprehensive history, has been published in an illustrated booklet by MacAndrews & Forbes, New York. The booklet traces the development of licorice from the dawn of civilization to the present day and reveals that the bulk is for tobacco, pharmaceutical, and confectionery uses.

N-Methylglucamine Data Sheet

N-Methylglucamine is the subject of a technical Data Sheet issued by Commercial Solvents Corporation, 17 E. 42nd Street, New York 17.

1953 Edition C. & C. Booklet

The 1953 edition of the booklet, Physical Properties of Synthetic Organic Chemicals has been issued by Carbide and Carbon Chemicals Company, 30 E. 42nd Street, New York 17. The 20-page booklet contains for the first time a section on 56 new research chemicals available. It presents data on more than 320 products. Condensed data on applications are presented and physical properties are given in tabular form.

The Aniline Story

The Aniline Story is the title of a ten-page booklet issued by National Aniline Division, Allied Chemical & Dye Corporation, 40 Rector Street, New York 6.

All-Purpose Surfactant Booklet

The Warwick Chemical Company, Division of Sun Chemical Corporation has issued a booklet describing Sulfanole KB-40, an all-purpose surfactant of the alkyl and aryl class. In addition to chemical and physical properties, a wide range of suggested applications is given. Copies are available from Sales Manager, Industrial Surfactants, Warwick Chemical Company, 10-10 44 Ave., Long Island City 1, N. Y.

The Hospital Pharmacy

Federal Security Agency, Public Health Service, Washington 25, D.C., has issued a 40-page booklet entitled Hospital Services—Pharmacy. The booklet is a reprint of a very comprehensive, illustrated, and detailed article entitled Suggested Plans for Hospital Pharmacies, 50, 100 and 200 Bed Hospitals.

Manual of Laboratory Safety

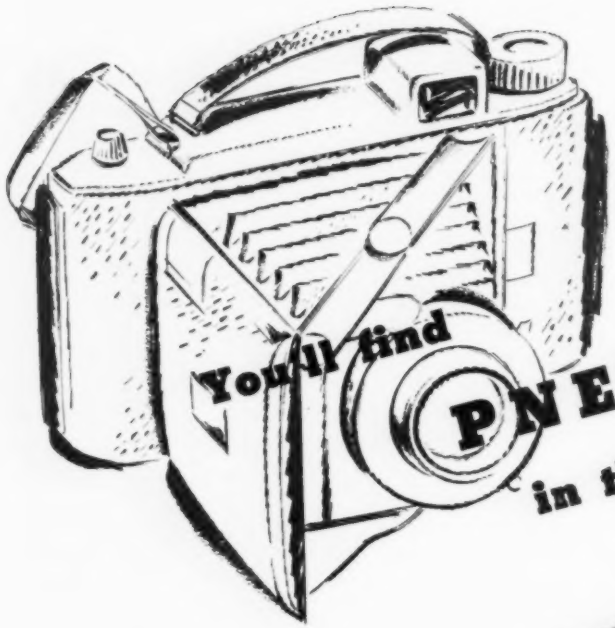
Fisher Scientific Co., 717 Forbes Street, Pittsburgh, and 245 Carlaw Ave., Toronto, has issued a new edition of the Manual of Laboratory Safety, a 48-page, illustrated book containing chapters on Accident Prevention, First Aid, Fire Prevention, and Safety Equipment. A safety bibliography covers a wide range from Analytical Chemistry of Industrial Poisons, Hazards and Solvents, to Ventilation.

Surface Active Agents, Onyx

The Industrial Chemical Division of the Onyx Oil & Chemical Company, Jersey City 2, has issued a catalog of their surface active agents, listing anionic, cationic, and non-ionic agents and supplying data on physical and chemical properties, concentrations, general applications and specified suggested uses.

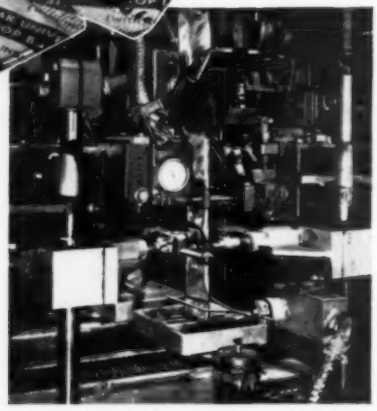
Polyglycol Esters, Surface Active Agents

Kessler Chemical Co., State Road and Cottman Ave., Philadelphia 35, has issued a data book on the polyglycol esters, surface active agents. This loose-leaf book gives very complete information on these products, even containing formulae for creams and lotions, hair preparations, shampoos, pharmaceutical preparations, and others.



You'll find PNEUMATIC in the picture

making packets for famed Eastman Kodak Co.



Two views of a Pneumatic Heat-Seal Packet Maker in operation at Eastman Kodak Company's Kodak Park plant in Rochester, New York

Universal Stop Bath is one of a trio of Kodak processing powders that "team up" to help make it easy for amateur photographers to be dark room experts.

Aluminum foil packets of this photographic chemical are formed, filled and heat sealed . . . at speeds up to 200 per minute . . . on Pneumatic's Packet Maker. This amazing machine is duplex in action, permitting two different products to be run simultaneously, and may be equipped for registered cut-off on printed messages. It was first designed for tea bag production, then found practical for putting up individual servings of sugar, spices and pharmaceuticals. Now, it's "in pictures" . . . and its performance is as sure-fire as Kodak products themselves.

The Heat-Seal Packet Maker is only one of many Pneumatic machines in daily use by America's leading producers of packaged and bottled goods. See Pneumatic *first* . . . because Pneumatic *is* first in its field.

PNEUMATIC SCALE CORP., LTD., 70 Newport Avenue, Quincy 71, Mass.
Also: New York; Chicago; San Francisco; Los Angeles; Seattle; Leeds, England.

★PNEUMATIC *Packaging and Bottling Equipment*

Management Forum

by Francis Chilson
INDUSTRIAL CONSULTANT

Boneheaded Executives

That great American magazine, the Atlantic Monthly, devotes itself in the main to literature, history, politics and philosophy. Once in a while its editors open the windows of Parnassus to have a quizzical glance at the passing scene in other fields of human endeavor. Their comments thereon often are salty and as frequently humorous, such as the comment by Charles W. Morton on management fatheads:—

"Many organizations harbor, in varying quantities, executives who are known to be not quite bright. Why these men have been singled out to direct policy and wield authority, or why their presence on the payroll is indulged at all, is not always clear to others concerned. As to the unbright 86 per cent of the salaried group earning $12,000 a year or more, the reference shelf fails to inform us; what has been written about executives has usually dealt with the hot shots. Of the boneheads in the managerial elite, the literature is scanty.

"Preferment of the bonehead is of course age-old. Ever since men first subjected themselves to the disciplines of association, most executives have been accredited boneheads, but it is only now that I am able to report the findings of a recent private survey of why this is so and why it doesn't make any difference.

"By far the most startling fact disclosed by the survey is that the American economy is indifferent to the mistakes of the 9000 unbright executives studied. A curious equilibrium was noted between their errors and the wholly independent phenomena which *in every case* compensated for them. It was as if some benign natural force were operating unperceived to protect from these men the fortunes of their employers. Strangely enough, a similar balance was found to exist between executive decisions that were (a) right for the wrong reasons and (b) wrong for the right reasons, and a more detailed study is projected for this subject.

"A few examples selected at random from the 9000 case reports reveal the bizarre quality of executive reasoning and its consequences:—

"BUNKER.—A high-rent retail area had grown up around Bunker's job printing plant, but Bunker could never muster enough energy to move to a less expensive and more efficient location. His real reason for not moving was his reluctance to give up his private office, a wooden enclosure in the middle of the main floor, cluttered and stuffed with a quarter century's debris—old catalogues, defunct galleys, samples, clippings and rubbish. Real-estate taxes were heading Bunker towards a receivership, when the city decided to build an arterial highway. In the land takings that followed, Bunker's property fetched for him a colossal profit. Now installed in a highly modern suburban plant, he is making pots of money and inveighing bitterly against life in general. His stockholders are sure he possesses second sight.

"APPLEBY.—This manager was talked into a ruinously expensive public relations campaign by a handsome young woman, because she happened to remind him of an unattainable girl who had sat next to him in school thirty years earlier. The campaign caused so much ribald comment about Appleby's company that his resignation was about to be demanded, when it was discovered that sales were up 43 per cent. The reason sales were up was that department store buyers had taken a scunner against the main competitor of Appleby's company, but neither Appleby nor his superior ever did find that out. Appleby got a $10,000 raise on account of the public relations fiasco.

"CALLOW.—Head of a large investment trust, Callow was in a liquid position (quite by accident) in 1927. A true disciple of inertia, he drove his associates almost to madness by missing out altogether on the securities boom. As the '29 crash progressed, Callow—still liquid—took on heroic dimensions. By the summer of '32, he became convinced that President Hoover would be re-elected, and acting on this hypothesis he filled the trust's portfolio. Callow was shocked by the election of President Roosevelt, and after an interval of brooding he decided to sell out. But before he could make his move, the new President suspended all trading

in securities. Callow next reasoned that the President would be impeached for devaluing the dollar, and that with impeachment would come a restoration of business confidence and higher prices, and he held on, once the markets were reopened. The President never was impeached, but Callow's portfolio multiplied itself tenfold, to his utter mystification.

"DEARTH.—Eastern story editor for a major film studio, Dearth conscientiously rejected every first rate book or play submitted to his office. But the same books and plays were always considered at the same time by the studio's West Coast office, which adapted from them a rich grist of box-office successes. Dearth remained undisturbed in his position, however, because his uncle was the studio's principal stockholder.

"VAGUELY.—Personnel man in a vast organization, Vaguely could never make up his mind about anything. Timid, seclusive, he sought escape in a woozy mysticism and became the principal client of an astrologer. The notion that his doings were directly related to the movements of heavenly bodies fired Vaguely with a new self-confidence in laying down the dicta supplied to him by the astrologer. Because the astrologer's decisions were no worse than those of Vaguely's colleagues, and because Vaguely enunciated them with assurance, this executive became celebrated as a man of action. The astrologer's errors made no difference in this case, because Vaguely was working for a government agency in Washington.

"Space is not available here for that part of the survey which explains why the not so bright executives ever got their jobs in the first place. Many, naturally enough, were advanced by the other not so bright managers who had recruited them, but all had a broad common characteristic: they never alarmed their employers or took them by surprise. Bunker, Vaguely, Dearth and the rest were consistent, if nothing else: they could be counted on, absolutely, to do the same thing every time."

—CHARLES W. MORTON in the Atlantic Monthly, Sept. 1952.

The following information is supplied by manufacturers of the equipment described and claims made below by these manufacturers are passed along for what they are worth. Presentation of such notice in this department is not to be taken as endorsement of the claims or of the equipment.

Processing Vat Bulletin

Cherry-Burrell Corporation has just issued a comprehensive 2-color, 12-page bulletin on its line of multipurpose, heavy duty processing vats known as Round Processors. The bulletin is well illustrated with photographs and line drawings and has numerous specification listings and tables.

These vats, in capacities of 300 to 1000 gallons, are designed for heating, pasteurizing, mixing, setting, and blending of heavy-bodied liquid products as well as for refrigerated storage. They are available in a variety of models to best satisfy specific processing conditions—with long sweep propeller-type agitator or scraper blade agitator, painted or stainless steel finish, steam or hot water heating, water cooling or direct expansion cooling. All product surfaces are stainless steel.

A copy of bulletin G-472 is available by writing to Cherry-Burrell Corporation, 427 W. Randolph St., Chicago 6, Illinois.

Sight Flow Glass

These sight flow glasses are installed at inlet and outlet nozzles of vessels as well as on the discharge side of pumps in processing of chemicals, petroleum, food and pharmaceutical products, to enable the operator to observe the flow, color, clarity or turbidity of the material being handled.

In general practice, they are made of heavy cast stainless steel, now rated as extremely critical material due to the defense program.

Instead of being of heavy cast stainless steel, all metal parts of these new glasses in contact with liquids are made of heavy-gauge rolled stainless steel. As a result, the saving in stainless steel is over 60 per cent.

The new sight flow glasses are manufactured in various models, in flanged or screwed types. The loose flange model can be turned to any desired angle for maximum visability.

They are designed for universal use in schedule 5, 10, and 40 piping systems and are available from stock made of Type 304 and Type 316 stainless steel and carbon steel. Various alloys and coatings are also obtainable. All sight flow glasses are individually tested.

They are manufactured by Grand Machine & Tool Company, 692-694 East Grand Avenue, Rahway, N. J.

PerfeKtum Lab-Seal

Popper & Sons, Inc., 300 Fourth Avenue, New York 10 announce the introduction of the PerfeKtum Lab-Seal, Model HS-1.

This table model, motor driven, ampule sealing mechanism is especially designed for pilot plant operation, research laboratories, hospital pharmacies and government institutions who do specialized work in the parenteral drug field.

The Lab-Seal, Model HS-1 is also very suitable for larger firms who have small production runs which cannot be economically produced on large equipment.

Further details may be obtained by writing the manufacturer.

Stokes keeps pace with growing industries

Battery of Stokes Model B-2 rotary tablet machines at the Vitaminerals, Inc., plant. Sixteen sets of punches and dies are used to produce 350 to 650 tablets per minute.

Examples of some of the many vitamin products manufactured at the modern Vitaminerals plant.

STOKES

For the past fifty years thousands of pharmaceutical houses have relied on Stokes equipment to produce a wide variety of products. Today, Stokes equipment is standard in nearly every pharmaceutical plant throughout the world.

Vitaminerals, Inc., Glendale, California, manufacturer of vitamin products, is typical of many manufacturers who use Stokes rotary tablet machines, drying closets, mixers and granulators. Plans for expansion of plant facilities at Vitaminerals include specification for additional Stokes equipment because of the efficient and reliable service Stokes machines have rendered in the past.

Stokes tabletting presses produce tablets of accurate weight, uniform density and finest appearance. Production by the hundred or the million requires little attention or servicing, a feature of special importance to plants located at a distance from service facilities.

Assistance is offered to pharmaceutical manufacturers, without obligation, through Stokes Advisory Service and Stokes engineers in the field, on such problems as tablet formulae, punch and die design, and improved manufacturing and operating procedures.

Send for Catalog No. 800, "Stokes Tabletting Presses", which pictures and describes tabletting processes, and for Catalog No. 600, "Stokes Pharmaceutical Equipment", which describes the complete line of Stokes pharmaceutical machinery now available.

STOKES MAKES

Plastics Molding Presses,
Industrial Tabletting
and Powder Metal Presses,
Pharmaceutical Equipment,
Vacuum Processing Equipment,
High Vacuum Pumps and Gages,
Special Machinery

F. J. STOKES MACHINE COMPANY, 5532 TABOR ROAD, PHILADELPHIA 20, PA.

New MIKRO AIR CONVEYING SYSTEM

Ventilates and Cools as it Carries Material to the MIKRO-COLLECTOR*

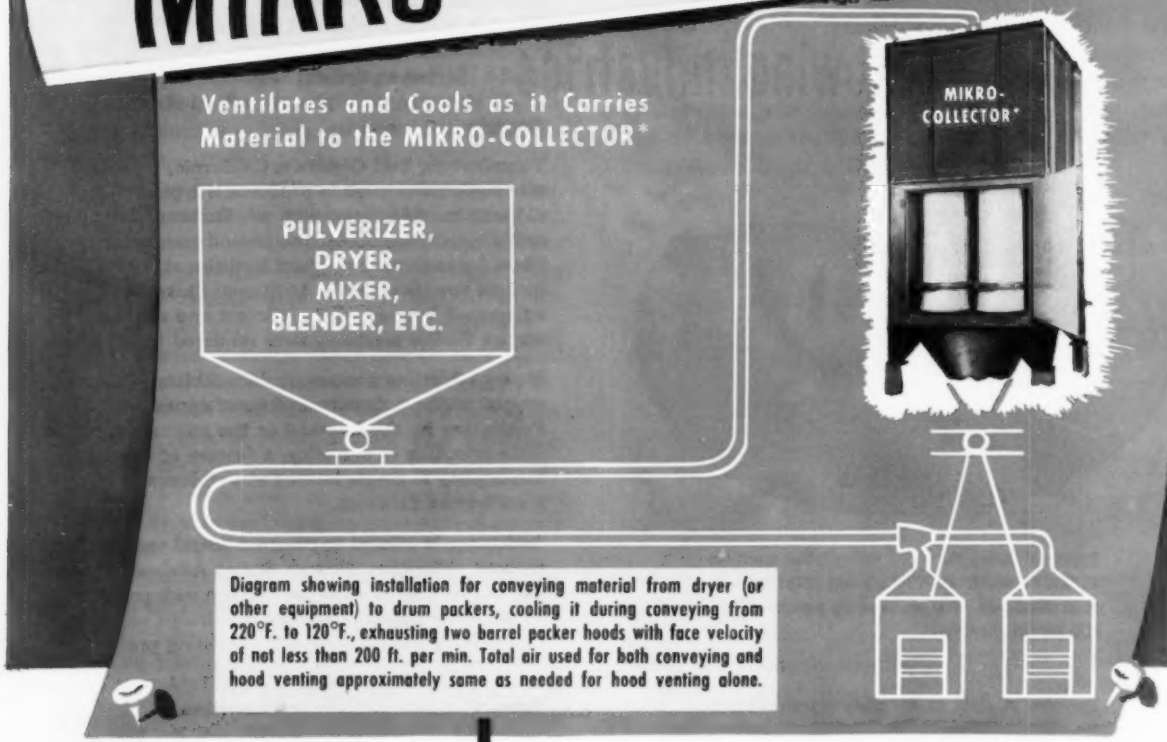


Diagram showing installation for conveying material from dryer (or other equipment) to drum packers, cooling it during conveying from 220°F. to 120°F., exhausting two barrel packer hoods with face velocity of not less than 200 ft. per min. Total air used for both conveying and hood venting approximately same as needed for hood venting alone.

- *Permits use of ventilated air from packaging hoods to be used for conveying material*
- *Reduces required size of dust collecting unit as much as 50%*
- *Conveys material from any dust source (dryer, pulverizer, blender, tank, vat, etc.)*
- *Cools the conveyed material without mechanical refrigeration*
- *Spans distances up to 200 feet*
- *Will by-pass any obstacle in the form of existing machinery or equipment*

These and other advantages make the MIKRO Air Conveying System an ideal low-pressure, low-cost method of conveying material from any dust source. Its complete flexibility helps solve plant layout problems without costly flow sheet revisions.

This dust-tight installation conveys up to 800 grains of dust per cubic foot of air . . . Makes possible the return of filtered air to processing area, thus reducing loss of heated or conditioned air . . . Assures freedom from infestation and metallic contamination . . . Easily cleaned . . . Eliminates booster fan, thus preventing change in particle sizing.

The MIKRO Air Conveying System is more economical to install, operate and maintain than a conventional mechanical system. Even greater saving is effected when stainless steel or non-ferrous construction is required.

*Patents applied for by H. J. Hersey, Jr. and Pulverizing Machinery Company

SEND FOR new MIKRO AIR CONVEYOR Bulletin

PULVERIZING MACHINERY COMPANY
22 Chatham Road **Summit, New Jersey**

PRESERVE OUR HERITAGE: FAITH, FREEDOM AND INCENTIVE

MIKRO-COLLECTOR (100 PER CENT)
Reg. U.S. Pat. Off.
By the makers of
MIKRO-PULVERIZERS and MIKRO-ATOMIZERS

1266

New Bulletin on Process Equipment

Of value to engineers in the processing industries is a new 12-page general catalog offered by the Patterson-Kelley Co., Inc. The catalog, No. 12, covers dry blending, process and heat exchange equipment.

Special emphasis is on the twin-shell dry blender which recently has caused many processing firms to revamp the blending methods. Photographs, drawings, tables and text demonstrate its versatility and effectiveness for thoroughly blending powders, grains, pellets and flakes in any combination.

In addition, the bulletin covers characteristics, applications, capacities, power requirements and other specification data for twin-shell, double-cone and ribbon blenders; kettles, evaporators, stills, agitators, autoclaves, pilot-plant units; and heat exchangers.

Catalog No. 12 is available on request from the Patterson-Kelley Co., Inc., 368 Warren St., East Stroudsburg, Pa.

Lid-Sealing Machine

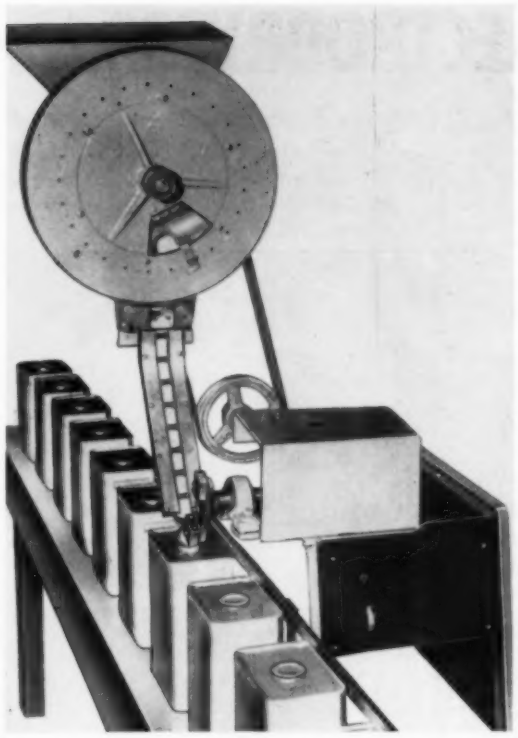
The application of Metal Seals, Inner Seals and Friction Lids to Tin and Fibre Cans as well as Glass Containers has heretofore been performed either manually or semi-automatically as no complete, fully automatic equipment has been available for the purpose. Realizing the wide need for such equipment the Tite-Cap Machine Co., Inc., has just introduced their Fully Automatic Lid Sealing Machine (pat. pend.) which employs a novel method of applying such Seals to any position on the can via a Rotating Magnetic Head, timed with the continuous movement of the can on a chain conveyor.

This newly developed machine consists of a specially designed hopper which automatically feeds the Lids or Seals into a chute. A Rotating Head equipped with Magnetic Fingers picks up a Seal from the bottom of the chute and applies it to the opening in the can as it moves into position under the Rotating Head. No supplemental operation is necessary as the application of the Seal is positive and therefore no additional device is required for effective sealing.

During application of the Seal the can is in continuous motion, no momentary stopping or holding being required. This eliminates danger of splashing or spilling, and, besides, makes for a simple machine with just one main moving part for application of the Seal, the Rotating Magnetic Head.

This Rotating Head, as well as the Magnetic Fingers are all fully adjustable, so that Seals or Lids may be applied to an opening in any position on the top of the can. These adjustments include compensation for variations in the cans.

As to the Chute, at the bottom it is equipped with a special Escapement Device which permits only one Seal at a time to be withdrawn, regardless of the size or weight of the individual Seals or Lids. Devices for marking or coding these Seals while in the Chute can also be furnished.



The "Tite-Cap" Lid Sealing Machine (pat. pend.) will apply metal Seals or Lids to cans containing lubricating oil, olive oil, lacquer, insecticides, industrial, chemical and food products, especially where a Tamper-Proof Seal is required. Friction Lids can also be applied to Fibre Cans of all sizes.

In those special cases where the seals are rolled in under the neck of the Spout, as on Olive Oil Cans, a special Spinning Head can be furnished thus providing a compact, double purpose unit on one base.

Manufacturer: Tite-Cap Machine Co., Inc., 57 Rose St., New York City 38, N. Y.

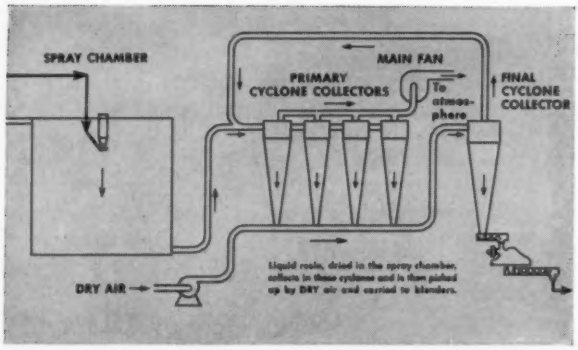
Acid Carboy Dumper

A carboy dumper, for use with hoists or overhead conveyors, that permits quick, safe handling of acids is offered by General Scientific Equipment Co., 27th & Huntingdon Sts. Philadelphia 32, Pa. The G-S Speedo Safety Carboy Dumper No. 77 can be quickly attached to any overhead hoist for dumping, moving, storing, loading, filling and general handling of acid carboys. An important feature of the dumper is that it permits the carboy to be tilted to any angle and locked in position to assure steady pouring. Chains at the bottom and top of the carboy keep wood from splitting or pulling out during handling. The entire design enables workmen to handle acids safely, economically.

The G-S Speedo Safety Carboy Dumper No. 77 is constructed to fit the particular acid carboy on which it will be used. This eliminates any looseness of fit, provides greater safety since the carboy can't move in the dumper.

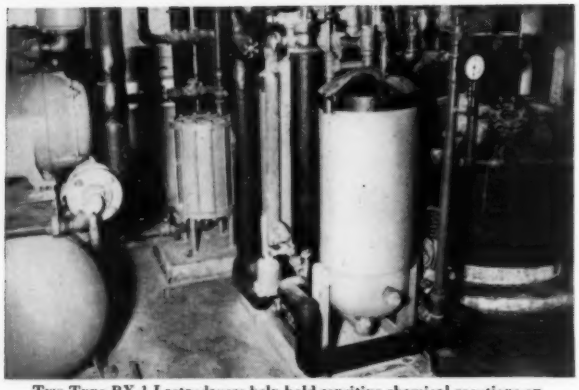
For complete information write General Scientific Equipment Co., 27th & Huntingdon Sts., Philadelphia 32, Penna.

LECTRODRYERS are production tools at these American *Cyanamid* Plants


SPRAY CHAMBER
MAIN FAN
PRIMARY CYCLONE COLLECTORS
To atmosphere
FINAL CYCLONE COLLECTOR
DRY AIR
Liquid resin, dried in the spray chamber, collects in these cyclones and is then picked up by DRY air and carried to blenders.

DRY air picks up powdered resin to keep it DRY at American Cyanamid's Wallingford, Conn. plant

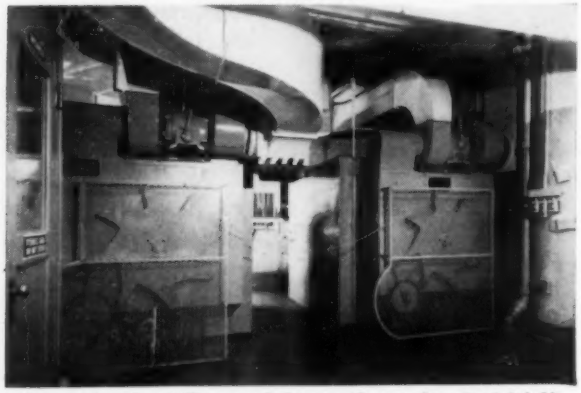
Get molding powders DRY and keep them that way; that's the function of this portion of the production line in this ultramodern plant. There's no moisture in the air that picks up molding powders as they come from the cyclones—no moisture to impair the quality American Cyanamid has compounded into these products.



Two Type BY-1 Lectrodryers help hold sensitive chemical reactions on the beam by DRYing the air supplied to controls.

On instrument air at Calco Chemical Division, Willow Island, W. Va.

No moisture gets into air lines here to condense, form ice, rust or sludge and cause trouble. Two Lectrodryers* designed especially for instrument air work, catch the vaporous moisture which aftercoolers, filters and separators let by. Calco Chemical Division's products are consistently higher in quality, therefore.



Aureomycin and penicillin are packed in a sterile area where the air is held at 6% relative humidity by these Lectrodryers.

Holding humidities constant at Lederle Laboratories Div., Pearl River, New York

Control the quality of air surrounding processes, just as you control materials going into products; this is a rule for quality production at Lederle Laboratories Division, as at the other divisions of American Cyanamid Company. Besides sterilizing the air here, Lectrodryers hold it at a constant temperature and humidity.

You probably have plenty of places where Lectrodryers will help you boost quality and speed production. For help in finding out, write Pittsburgh Lectrodryer Corporation, 309 32nd Street, Pittsburgh 30, Pennsylvania.

LECTRODRYERS DRY WITH ACTIVATED ALUMINAS

LECTRODRYER

*REGISTERED TRADEMARK U.S. PAT. OFF.

Multi-Probe Ultra-Viscoson Systems

The Ultra-Viscoson Corporation, Hartford, Connecticut, announced Model MP Multi-Probe Ultra-Viscoson systems for continuous, automatic viscosity measurement to 650° F. and 1,000 p.s.i. pressure at up to 16 probe stations. Hermetically sealed ultrasonic probes the size of a fountain pen, having no moving parts, are installed permanently in up to 16 kettles or pipe lines. One Ultra-Viscoson computer and multiplex unit located up to one mile from probes indicates viscosity measured by any desired probe, or automatically records viscosities singly or in sequence on standard multipoint industrial recorders. Up to 16 kettles, reactors or pipelines are monitored automatically in production and application of resins, starch, high polymers, foods, inks, petroleum products, adhesives, gelatin, paints, coatings, paper, textiles and soaps.

Strip Pak Machine

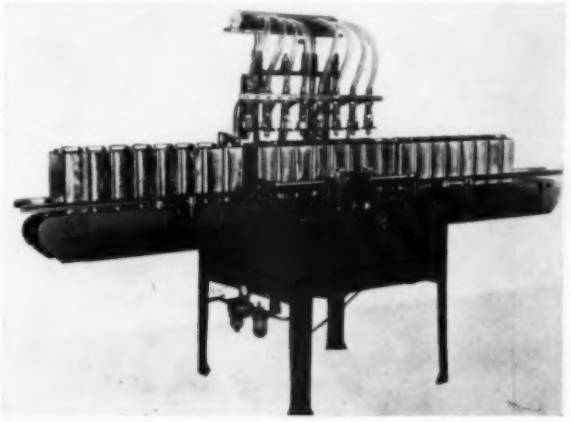
The Donofrio Strip Pak Machine, a new low-priced, improved model designed and manufactured by the McKay-Davis Chemical Corp., 328-332 North Westwood Ave., Toledo, Ohio, packages up to 600 pills, capsules or tablets per minute in plain or printed cellophane, pliofilm, glassine, aluminum foil or other pliable heat-sealing materials

Designed for simplicity of operation so that it can be operated easily by the average girl worker, the Donofrio Strip Pak machine requires very little maintenance and gently handles the product through a simplified feed mechanism which prevents marring and breakage. It stands 61 inches high, 26 inches square and weighs approximately 340 pounds.

Parts are obtainable to adapt this improved model to package various sized items, including tablets up to one inch in diameter; and through a simple adjustment will produce a wide variation of units per pack. Among the many added new features is a continuous temperature control.

Straight Line Filling Machine

Perl Machine Mfg. Co., 68 Jay St., Brooklyn 1, has added a Fully Automatic Straight Line filling machine, *requiring no operator*, to its complete line of filling, sealing, and packing machines. Built in 3 sizes, the machine accommodates metal, glass, and plastic containers from ½ oz. to 5 gallons. Viscous and foamy liquids are accurately filled by gravity, pressure, or vacuum. This high speed machine of simple construction offers fully automatic filling at lowest cost. Electro-Pneumatically controlled safety devices prevent damage to containers or valves.



Bulletin on Compacting Presses

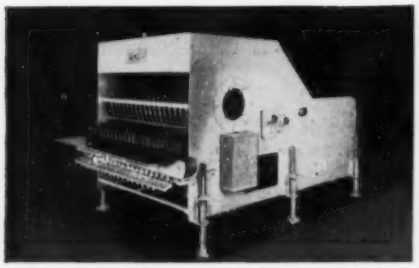
Bulletin No. 3100, just issued by Baldwin-Lima-Hamilton Corp., Philadelphia, Pa., gives a complete table of specifications for its new Models 20-A (75-ton) and 45-A (200-ton) Baldwin-Defiance compacting presses.

The 4-page folder also describes the exclusive mechanical features of the two presses and tells how they are precision engineered to handle any compacting job at low cost and with a minimum of attention. An added feature is the help offered by the Research & Development Laboratory to make tests on any material and recommend the size and number of cavities for optimum production.

Brochure on New Plastic Pipe

The Plastic Products Division of Triangle Conduit & Cable Co. Inc., New Brunswick, New Jersey, announces the publication of a 16 page brochure on plastic pipe.

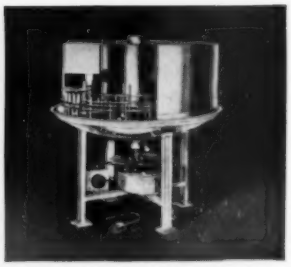
It contains all pertinent information on Triangle's four types: Flexible, Semi-Rigid, Rigid High Impact and Rigid Polyvinyl Chloride Pipe. Detailed tables give chemical and physical characteristics of each type. Also included are advantages of using plastic pipe and simple directions on how to install and join the pipe.



The U. S. Load-A-Matic automatically unscrambles and rinses containers at any synchronized production speed.

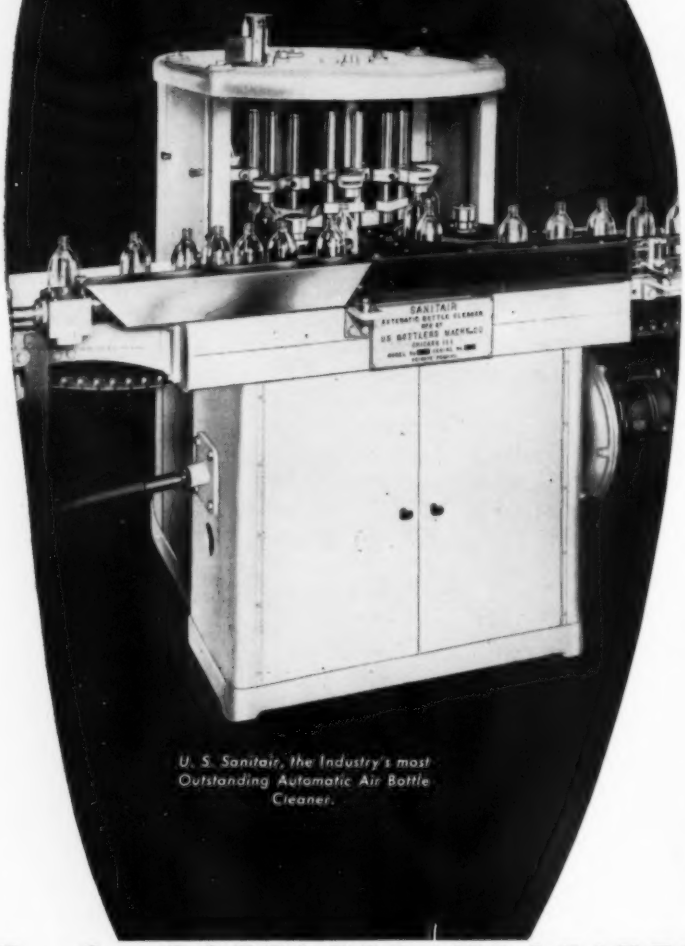
The U. S. Rotary Rinser and Cleaner loads manually, rinses automatically any bottle or jug with hot or cold water or steam. Can also clean by compressed air.

The U. S. Easy Air Cleaner cleans semi-automatically by compressed air. A portable machine for small plants—a standby for peak loads. Handles any size container.



The U. S. Ampoule Rinser is adaptable also to thermal shock treatment. For all sizes of ampoules, vials and serum bottles.

Solve Your Container Cleaning Problems this way:



U. S. Sanitair, the Industry's most Outstanding Automatic Air Bottle Cleaner.

Whatever method of cleaning you may require, be it by compressed air or by rinsing, a custom-assembled machine can out-perform a completely standardized machine every time—and usually at no greater machine cost.

The U. S. container cleaning line represents five entirely different machines with various ranges of adaptations that can be engineered to a variety of specific needs.

U. S. automatic air cleaning machines with exclusive mechanical innovations are today meriting first call throughout the packaging industry. There are completely automatic and semi-automatic U. S. rinsers of outstanding performance for every size and type of container.

Whatever your container cleaning problem may be, it will pay you well to get U. S. recommendations at no obligation to you. Write, phone or wire our nearest representative or write the factory.

U. S. BOTTLERS MACHINERY COMPANY

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Sweco Separator

A colorful new 8-page bulletin has just been published dealing with the SWECO Separator, the first major change in production screening and separation in over a century. Southwestern Engineering Company of California has successfully developed the most versatile mechanism for wet or dry screening—from 20 to 325 mesh screens. One of the main features of the new SWECO Separator is its great production capacity at amazingly low operating costs. No special foundation or supports are required, and transferred vibrations are virtually nonexistent. Free bulletin may be obtained by writing Separator Division, Southwestern Engineering Company, 4800 Santa Fe Avenue, Los Angeles 58, California.

Plant Maintenance Conference

The Fourth Plant Maintenance Conference is being held in the Public Auditorium, Cleveland, Ohio, January 19 to 21. A panel discussion of Maintenance Essentials opens the first session. Chase O. Oren, superintendent, Technical Service, the Dow Chemical Company, and Stuart Whitehead, general superintendent, Maintenance and Construction Department, Calco Chemical Division, American Cyanamid Company are members of the panel. Maintenance Essentials are given as Planning and Scheduling Maintenance Work, Maintenance Costs and Budgets, Training Maintenance Workers and Supervisors, Work Standards and Measurements.

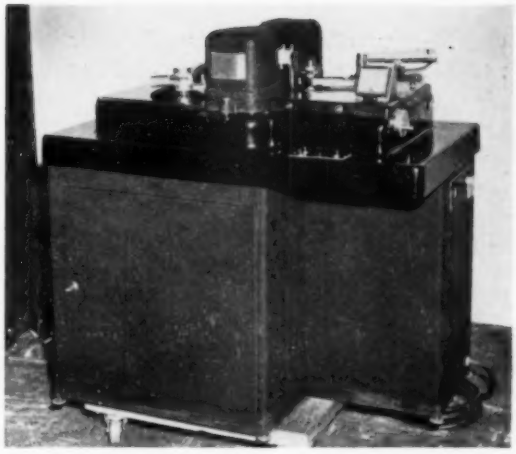
E. A. Le Gros, plant engineer, Pepsodent Division, Lever Brothers Company, Chicago, will be the discussion leader at the sectional conference on Problems in Plant Engineering to be held on the second day of the conference. Howard A. Esterbrook, plant manager, Ethicon Sutures Laboratories, New Brunswick, N. J., will be the discussion leader at the round table discussion on Incentives and Work Measurement to be held on the second day. Stuart Whitehead, of Calco, will be the discussion leader at the round table discussion on Maintenance in Chemical Plants, also to be held on the second day.

On the evening of the second day a panel discussion on Growing Pains of an Engineering-Maintenance Organization will be held under the chairmanship of R. R. Nydegger, director of Central Engineering, Johnson & Johnson, New Brunswick, N. J. All panel members in this discussion will be from Johnson & Johnson.

Spectrometer for X-Ray Analysis

A new Norelco 90-degree Geiger-counter X-ray Spectrometer that provides at minimum cost a powerful analysis tool for use in research and educational fields as well as for production control, is now available from the Research & Control Instruments Division, North American Philips Company, Inc., 750 South Fulton Avenue, Mount Vernon, N. Y.

Designed to provide a full standard range of operation, the new instrument employs a long-life air-cooled X-ray tube and a goniometer having a radius of 130



millimeters. Angular range is minus 10° to plus 90° (two theta). Angles can be read directly from a dial or from a strip chart (degree pen optional). The angle can be varied quickly by a manual drive or by employing the incorporated motor drive. The Geiger-counter position is continuously readable to 0.01 degree (two theta) over the full range.

The high output X-ray generator provides fixed operation at 35 KvP at 6 Ma and operates on 200-240 volts, 50 or 60 cycles. X-ray generator is self-rectified for simplicity and low tube replacement cost. X-ray tube is air-cooled and can be quickly interchanged. Voltage and current stabilizers are included.

The new 90-degree X-ray Spectrometer is designed specifically for spectrometric work and the goniometer reads directly in degrees, with a separate dial reading in hundredths. Bragg focussing is employed, gearing consists of a precision cold-worked worm gear and a spring-loaded, hardened worm.

The new instrument is easily aligned with gauges and fixtures provided as part of the equipment. The 90-degree spectrometer has an on-off shutter for beam cut-off and a scatter shield to reduce stray radiation. The Geiger counter is a special tube which is volume-sensitive to X-rays.

Electronic circuits are designed for high efficiency and stability. The new 90-degree X-ray spectrometer is complete and ready to use, requiring no adaptations or assembly of parts. Control layout is simple and convenient for rapid work. No knowledge of electronics is required for intelligent operation. Accuracy is excellent, alignment is simple, action is stable, and functions are reproducible.

New instrument provides a fixed stable voltage of 1500 for the Geiger counter tube. Linear rate meter operates a 10 MV recorder, no zero adjustment is required, and full scale ranges of 100 and 1000 counts per second are provided.

The new 90-degree X-ray Spectrometer measures approximately 24 inches in width, 40 inches in height, and 43 inches in length. Net weight is approximately 300 lbs. Finish on the goniometer is glossy black and chrome. The compact console cabinet is black wrinkle.

A NEW member of a great old family of products . . .

STAINLESS STEEL TANKS by COLTON

Stainless steel is the ideal metal for practically every material—food, beverage, cosmetic, pharmaceutical—that requires sanitary, inert contact. These tanks are the finest that modern materials and methods can produce. Standard types include single wall, twin wall, vertical, horizontal, open tops with hinged covers, closed tops with manhole. Standard sizes range from five to five thousand gallons. Special types and sizes made to specifications. Optional equipment includes insulation, agitators, side and/or bottom pressure jackets for heating and cooling, all types of fittings. Low-cost, portable and built-in agitators of all kinds also available separately. Write for detailed specification sheets.

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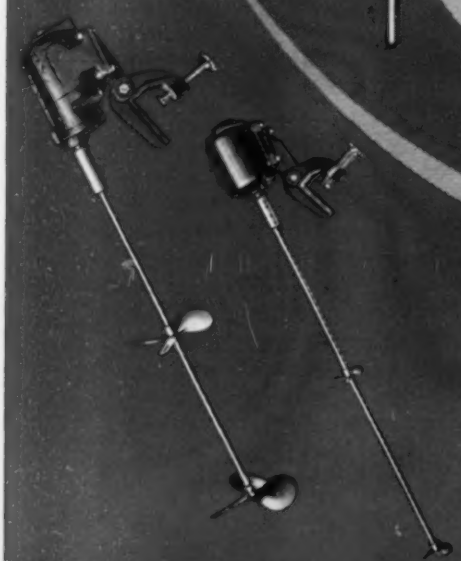
Specialists in Pharmaceutical and Packaging Machinery for nearly 70 years



50% Saving

in drying costs *with* COLTON MODERN OVENS

Colton No. 1018 Drying Oven
Laboratory Model—for 10 Trays

Colton No. 2030 Drying Oven
Production Model—for 20 Trays

Granulations, effervescent salts and other pharmaceuticals are dried twice as fast in these new, high speed, accurately controlled ovens. Their remarkable efficiency is due to new design, new construction, new and positive uniform air circulating system. Low first cost and low operating cost make possible the recovery of entire oven investment in first few months of use. Special ovens to specifications. Write for detailed specification sheet.

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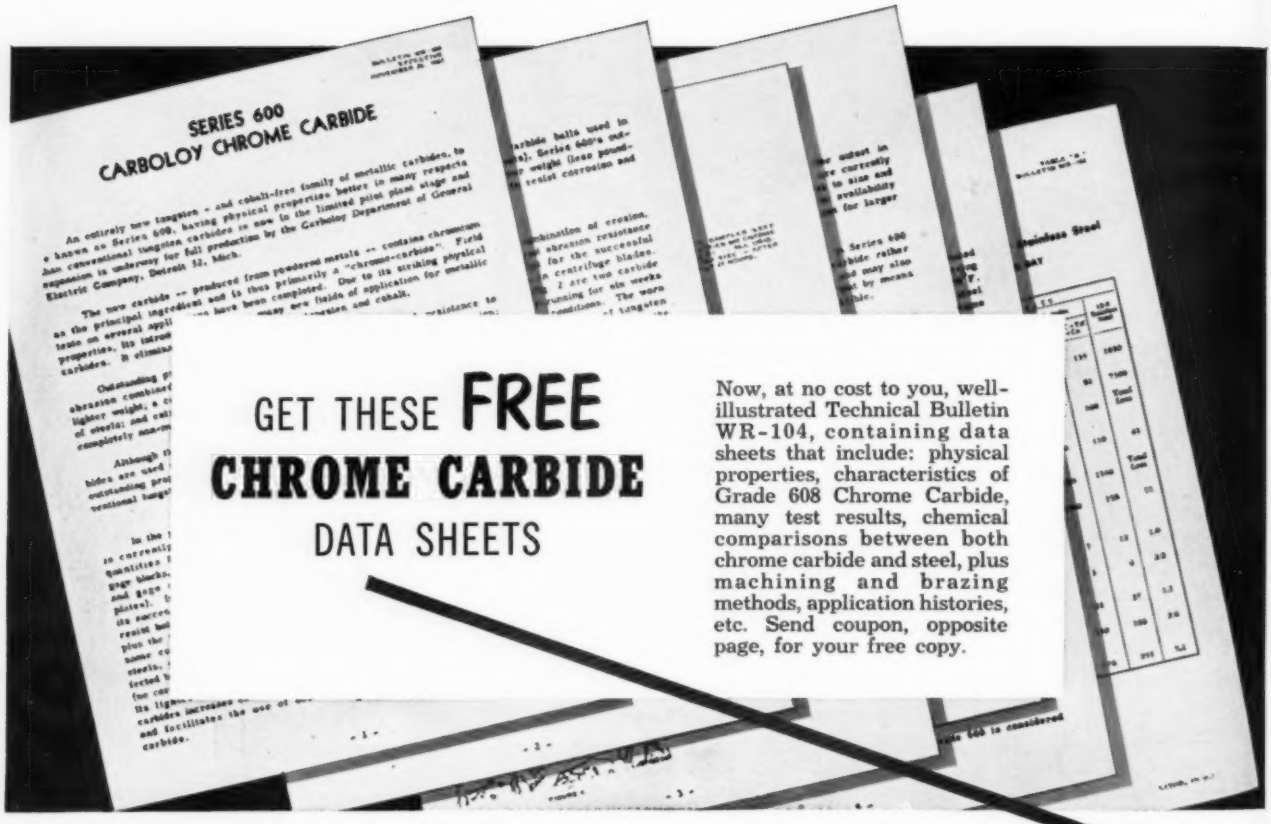
Colton No. T-4030 Drying Oven
For 2 Trucks—20 Trays Each

NOW, FOR THE **FOOD** AND **DRUG** FIELDS . . .

a brand-new Carboloy created-metal equipment parts against corrosion,

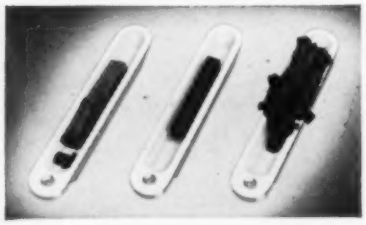


GET THESE **FREE**
CHROME CARBIDE
DATA SHEETS

Now, at no cost to you, well-illustrated Technical Bulletin WR-104, containing data sheets that include: physical properties, characteristics of Grade 608 Chrome Carbide, many test results, chemical comparisons between both chrome carbide and steel, plus machining and brazing methods, application histories, etc. Send coupon, opposite page, for your free copy.

See how chrome carbide

✓ **WITHSTANDS GREAT HEAT**

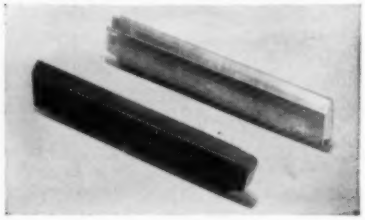


After exposure in air at 1850° F. for 24 hours, Grade 608 Chrome Carbide (center) is hardly discolored, while 18-8 stainless steel (left), tungsten carbide (right) are all but disintegrated. Bars originally were same size, shape.

✓ **RESISTS CORROSIVE ACIDS AND ALKALIS**

With sulphuric acid as the corrosive agent, for example, chrome carbide parts, such as those above, show about 30 times the resistance of 18-8 stainless steel and 3 times the resistance of tungsten carbide.

✓ **STOPS ABRASIVE WEAR COMBINED WITH CORROSION OR EROSION**



Centrifuge blades, after 6 weeks of operation under severe conditions. Tungsten blade (left) shows wear. Chrome carbide blade (right) successfully resists the combination of abrasion, corrosion and erosion.

to wearproof your abrasion, erosion.

It's cemented chrome carbide—not a cutting-tool material, but a new wear-proofing created-metal for use wherever heat, oxidation, acids, alkalis and abrasive wear must be effectively combatted.

HERE IS a new and outstanding wearproofing metal —Carboloy Grade 608 Cemented Chrome Carbide — the first member of an entirely new family of metallic carbides.

Grade 608 Chrome Carbide opens wide the door to longer part life, and offers you such resulting benefits as lower replacement and maintenance costs, higher all-round performance.

Here's why: It features extremely high resistance to corrosion or erosion, combined with excellent abrasion resistance. It's harder than steel, virtually unaffected by heat or high-temperature oxidation. Far surpasses stainless steels in many applications for resisting acids and alkalis, too.

In addition, it is light in weight, completely non-magnetic and has a coefficient of thermal expansion about the same as that of steel. It is machineable and hard as tungsten carbide, stable and strong.

Soon, production quantities of Grade 608 Chrome Carbide will be available. In the meantime, if you're a chemist, designer, metallurgist or engineer, you'll want all the facts on this new metal. Send coupon below for free data sheets, described on opposite page.

OFFERS YOU LONGER, TROUBLE-FREE PART LIFE IN

SPRAY NOZZLES

Tests show that chrome carbide nozzles can cut down clogging by eliminating corrosion; can improve all-round spray performance.

STEAM VALVES

Balls and seats of chrome carbide are light for easier operation, yet better able to resist scratching, pitting, abrasion.

ORIFICES FOR HOT GASES

Here, chrome carbide can resist oxidation and temperatures higher than those which would disintegrate steels and tungsten carbides.

PLUS THESE OTHER CHROME CARBIDE APPLICATIONS NOW BEING TESTED

- Sheer blades for molten glass
- Core pins for baking ceramic parts
- Fishing rod guides
- Centrifuge nozzles, separating equipment
- Bearings where corrosives are present
- Textile guides
- Nozzles and valves: soaps, fats, oils, foods, chemicals, pharmaceuticals, petroleum products, fruit juices
- Punches for movie film
- Valve and core pins, die casting, and many other applications.

9-PIECE TRY-IT-YOURSELF KIT, $10.75

Test Grade 608 Chrome Carbide yourself. Kit includes: 3 bars ¼" sq. x 2"; 2 bars ¼" sq. x 1"; 3 bushings, 5/16" I.D.; 1 rod, ⅛" dia. x 1" long . . . adequate samples for a wide range of tests. Bulletin WR-104 included.

CARBOLOY
DEPARTMENT OF GENERAL ELECTRIC COMPANY
Detroit 32, Michigan

"Carboloy" is the registered trademark for the produtts of Carboloy Department of General Electric Company

CARBOLOY Department of General Electric Company
11161 East 8 Mile Street, Detroit 32, Michigan

☐ **Please send me free Technical Bulletin WR-104 only.**

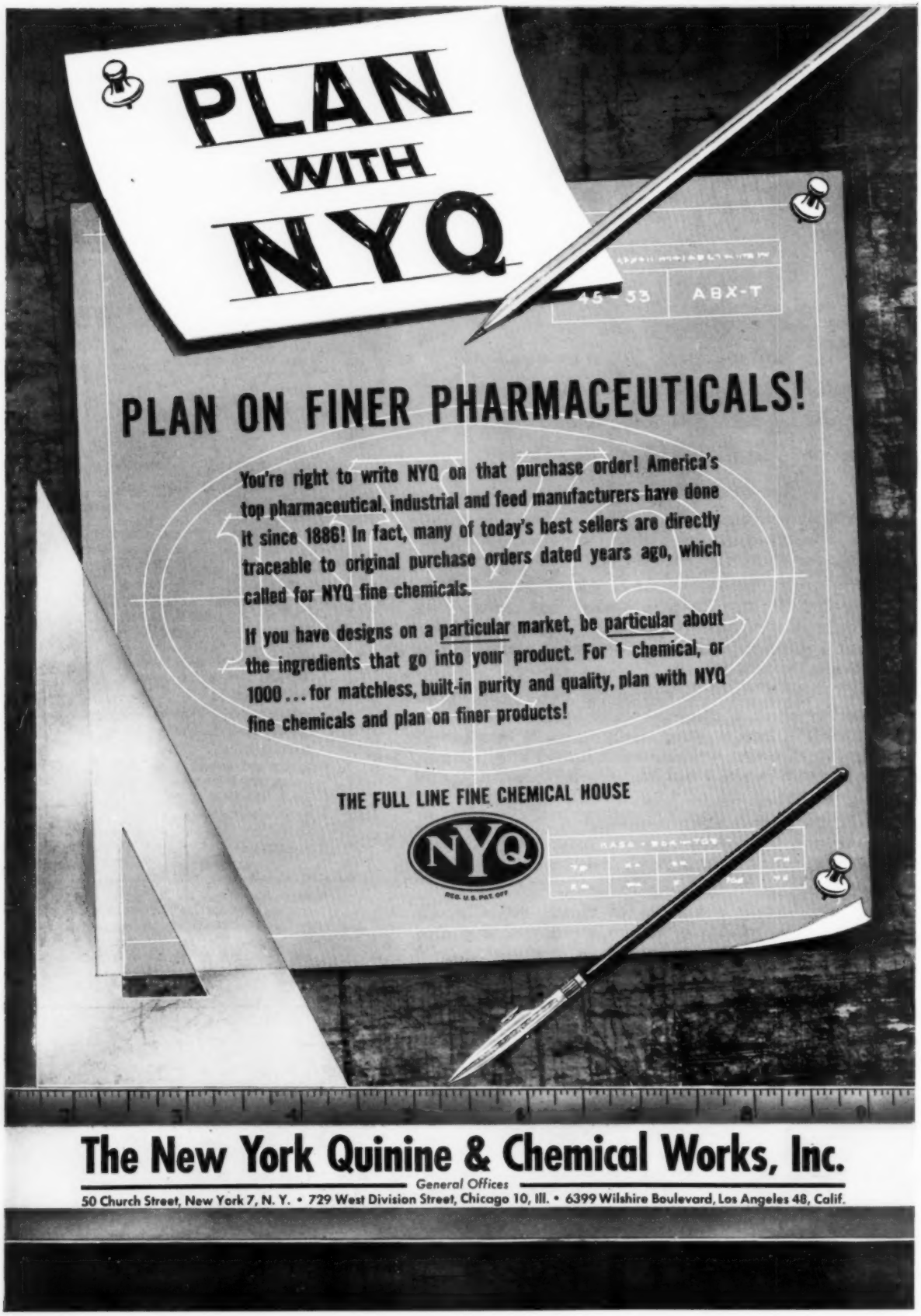
☐ Please send me ( ) sample Try-It-Yourself Kits of Grade 608 Chrome Carbide at $10.75 each. (Bulletin WR-104 included.) Enclosed is ☐ Check ☐ Money Order ☐ Purchase Order for $_____.

Send to_____ Title_____

Name of Company_____

Address_____

City_____ Zone_____ State_____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You're right to write NYQ on that purchase order! America's top pharmaceutical, industrial and feed manufacturers have done it since 1886! In fact, many of today's best sellers are directly traceable to original purchase orders dated years ago, which called for NYQ fine chemicals.
If you have designs on a particular market, be particular about the ingredients that go into your product. For 1 chemical, or 1000... for matchless, built-in purity and quality, plan with NYQ fine chemicals and plan on finer products!
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Industry's Books

Investment Castings For Engineers, by Rawson L. Wood, President, Arwood Precision Casting Corp., and Davidlee von Ludwig, Consulting Materials Engineer, 477 pp., Illus., (1952), Book Division, Reinhold Publishing Corp., New York, $10.

Logically arranged for day-to-day reference use, this book offers an unusually comprehensive description of the salient features, advantages and limitations of investment castings as they are now employed in the metal working industries. Emphasis throughout is on design engineering factors which determine the attainable precision of cast dimension, cleanliness and uniformity of metalurgical structure. The book points out both present accomplishments and the considerations involved in developing further the industrial phase of investment castings. Present design and metallurgical limits are clearly defined, as are the degrees of cast tolerance control now commercially obtainable. Recent techniques are described in detail. Two chapters deal with the frozen mercury method, the entire mechanics of which have never before appeared in print. This book will prove of great technical assistance to all technologists in the metal casting and related fields.

Styrene—Its Polymers, Copolymers and Derivatives, Edited by Ray H. Boundy, Director of Research The Dow Chemical Company, Raymond F. Boyer, Director, Physical Research Laboratory The Dow Chemical Co., and Sylvia M. Stoesser, Editorial Assistant, American Chemical Society Monograph Series #115, 1304 pp., (1952) Book Division Reinhold Publishing Corp., New York, Cloth $20.

This valuable book brings you a thorough-going account of the polymerization, copolymerization, chemical modification and manufacture of styrene, and of its industrially important derivatives. The book opens with a history of styrene monomer and polymer dating back over a century. Current methods of manufacture are then described, followed by detailed chapters on physical properties, methods of handling and analysis, and the chemistry of styrene. The theory and practice of styrene polymerization is next discussed, together with a brief chapter on the uses of styrene monomer including its role in the synthetic rubber program. The remainder of the book deals with the physical behavior of polystyrene, styrene derivatives and resins, German styrene practice, copolymers of styrene, and concludes with a lengthy and detailed description of the fabrication of polystyrene. Of unusual interest is the special appendix covering several recent advances in the field. Included in this section is a full discussion of vinyltoluene, a monomer similar to styrene but using toluene as a raw material rather than benzene.

The Extra Pharmacopoeia (Martindale), Twenty-third Edition, Volume I, (1952) 1352 pp., The Pharmaceutical Press, London 56s including postage.

The whole of the book has been completely rewritten and revised, and it has been brought up to date in respect of the very wide field of therapeutics and pharmacy which it covers. Following are some of the more outstanding features: Abstracts—Nearly three-quarters of the 4000 abstracts in the book are new, and have been taken from the literature over the last ten years. Antidotes—Particular attention has been paid to the inclusion of information on the toxicity of chemicals and drugs, and on the treatment of overdosage. National Pharmacopoeias—Every new national pharmacopoeia which has been published since the last edition has been examined and suitable references from each one are included. Comparisons are made between the British Pharmacopoeia, the United States Pharmacopoeia and the International Pharmacopoeia, so that buyers and users of drugs will be made aware of points of contact and difference. Poisons Legislation — The system of indicating throughout the text the classification of controlled substances has been retained. Proprietary Medicines—A large number of references are made to American and other foreign proprietaries. Special Sections—There are special sections on Antibiotics, Blood Transfusion, Bacterial Products (sera, vaccines, etc.), and Surgical Ligatures and Sutures.

Volumetric and Phase Behavior of Oil Field Hydrocarbon Systems, by M. B. Standing, Ph.D., Division Supervisor, Drilling & Production Research California Research Corporation, 123 pp., 9" x 11½" (1952), Book Division, Reinhold Publishing Corp., New York, $10.

Of invaluable aid to all petroleum engineers, geochemists and geologists interested in oil field chemistry, this practical book collects into a single volume the widely scattered data on the behavior of hydrocarbon systems in petroleum reservoirs. To systematize discussions of phase behavior, complex hydrocarbon systems have been divided into three categories: gases, condensate systems and dissolved gas systems. Although primarily concerned with the composition and phase behavior of fluids, the book also discusses the physics of flow of oil and gas in reservoir rock.

Chemical Investments, An Analysis of Research, Growth and Finances in the Chemical Industry, by John F. Bohmfalk, Jr., Clark, Dodge & Co., 87 pp., Paper Bound, (1952), Chemonomics, Inc., New York, $5.

This book examines growth in relation to research, then examines promising growth areas in the chemical industries. After a review of financial facts and figures, wherein the author discussed profit margins, depreciation policies, payout-times, expansion programs, etc., Mr. Bohmfalk presents an individual analysis of a number of companies including: duPont, Allied Chemical & Dye, Monsanto, Union Carbide, American Cyanamid, Dow, Pfizer, Merck, Diamond Alkali, Air Reduction, Commercial Solvents, Mathieson and Penn Salt. Each of these firms is examined individually, their recent developments discussed, both research and management policies examined and the future of each of the companies examined. In addition, detailed finanical statistics are presented for each of the twenty companies for a number of years.

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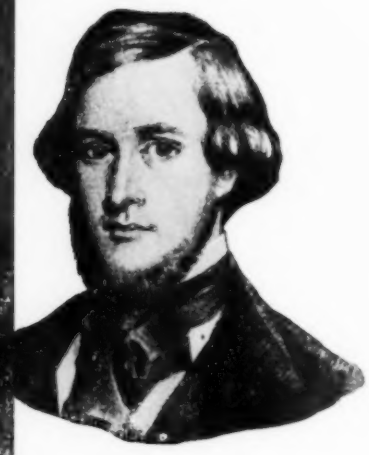

KNOWN BY REPUTATION

DR. WILLIAM THOMAS G. MORTON (*1819-1868*) American surgeon dentist known as the first man to publicly demonstrate the anesthetic properties of sulphuric ether and to emphasize its value to the medical world. Illustration shows him in the year 1846 about to administer ether just prior to a tooth-removing operation.

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Readers' Questions

LANOLIN HAIR CREAM: Would you kindly send me a simple formula for a water emulsion containing lanolin to be used as a hair preparation for home use? Palmyra.

I think the following formula for a hair conditioning cream will serve your purpose:

Cetyl/stearyl alcohols (Ceramol)	**15.0 parts**
Lanolin	**2.5 " **
Tartaric acid USP	**1.0 " **
Water and preservative, to make	**100.0 " **

WATERLESS HAND CLEANSER: Will you kindly supply me with a formula for a hand cleansing cream that is not gritty, water soluble, that may be used with or without water? I want one that will remove grease. Chicago.

I think the following composition, suitable for making a soft paste, will serve your purpose:

White soap chips	**40.0 parts**
Sodium alkyl aryl sulfonate	**10.0 " **
Water	**500.0 " **

The resulting product may be filled into collapsible tubes. A suitable proportion of a water-soluble perfume compound may be added to the paste. The compound is applied directly to the hands, worked in to remove the dirt, and wiped off with a rag.

HAIR STRAIGHTENER: Please send me information on a so-called hair straightener for colored people. Dallas.

I would suggest that you try something on the following lines:

Yellow petrolatum	**6 parts**
Yellow beeswax	**1 part**
Peanut oil (refined)	**2 parts**
Perfume oil	**sufficient**

Melt the petrolatum in double boiler and add the other ingredients. The perfume should not be added until the mixture begins to solidify around the edges. This is an amber product. If a water white product is desired use white petrolatum and white beeswax and substitute equal parts of deodorized castor oil and mineral oil for the peanut oil. By adding more wax and less of the oils a product can be obtained that will straighten the hair.

MASSAGE CREAM: We have many calls for a body massage cream, one that is massaged in and rolls out. I would be grateful for any suggestions that you can give. Baltimore.

Such creams can be based on casein, starch or latex. One satisfactory rolling cream with a corn starch base may be made from:

Cetyl alcohol	**6.0 per cent**
Mineral oil	**3.0 " " **
Paraffin wax	**1.0 " " **
Borax	**3.0 " " **
Glycerine	**5.0 " " **
Water dist.	**66.5 " " **
Starch (corn)	**15.0 " " **
Perfume	**0.5 " " **

To make this product a cream is first prepared by emulsifying the waxes and oils with the glycerine, water and borax as by same method of making a cold cream. Then the starch is worked into the emulsion while it is still warm and liquid. It is stirred until it congeals and then filled.

CAMOUFLAGE MAKEUP: I am writing you in regard to a formula we would like to have you send us, about a theatrical type makeup cream. We have intention of using it for a camouflage face cream. The texture of the cream must be like a hand cream, yet not as greasy. It also must be easily removed. Any formulas or information that you might be able to render us would be greatly appreciated. Milwaukee.

I think that the following formula should serve as a good working basis for further experiment:

Stearic acid	**12.25 parts**
Diglycol stearate	**6.12 " **
Caustic potash	**0.50 " **
Glycerine	**2.10 " **
Water, distilled	**13.34 " **
Erythrosin, or tartrazine	**0.12 " **
Zinc oxide	**6.12 " **
Lake color, to suit	**3.10 " **
Perfume, to suit	**0.75 " **

I should like to point out that camouflage grease paints were developed for the army during the war. Formulas for these products were published in the June 1943 issue of DRUG & COSMETIC INDUSTRY.

17 major tests!

to assure lipstick quality

KOLMAR, recognized as America's leader in private label cosmetics, assures *highest quality* and *uniformity* by an intensive program of tests and retests. *Lipstick,* for example, is given 17 major tests and many additional routine tests throughout the entire manufacturing process.

Besides the more or less routine tests, such as melting and softening point; application, correctness of shade, sheen, color distribution, etc., we of Kolmar make special tests such as breaking point, water bleeding and scientific stain analysis. Many of the major tests are done with micro-photographs (magnified 400 times).

Kolmar's testing program is continuous from the raw materials to the finished product. Every batch of lipstick made, regardless of size, is not only given the 17 major tests, but all the tests are repeated and repeated until the batch is used up. Only a few of the 17 major tests are listed here, but we shall be glad to reveal Kolmar's complete testing data to interested parties.

KOLMAR methods are unique. Its various plants across the country are staffed by *experienced chemists and highly trained technicians,* continually seeking new and better methods . . . and when necessary, inventing and producing special machinery and equipment to achieve the results desired. Thus KOLMAR Laboratories are recognized as *originators, pioneers* and *leaders* in the creation of finer cosmetic products.

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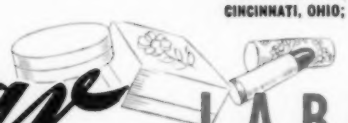

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Advancing Therapy

Fungus Infection Treatment

In a communication to *The Lancet* (2:146, 1952) concerning the treatment of fungus infections of the feet, A. V. Adams stated that silver nitrate in 10 per cent aqueous solution, containing 5 per cent rectified spirit, can be recommended for all cases. It will be found especially beneficial in those that have failed to respond to other remedies. One application, followed by exposure of the lesions for a few minutes to direct sunlight, is usually sufficient; but two or three applications at daily intervals are sometimes needed in the tropics.

ACTH for Bursitis

A new approach to the treatment of bursitis is indicated in the studies made by C. Le R. Steinberg and A. L. Roodenburg (*J.A.M.A.* 149:1458, 1952). They report that six patients with subacromial bursitis were treated with corticotropin (ACTH). In five the condition was acute and in one chronic. Roentgenograms of the shoulder were taken in five cases; these showed calcification in the subacromial bursa. Follow-up roentgenograms showed disappearance of calcification within a period of one month in one case and no change in calcification in another case. Complete relief of pain and return to normal function of the shoulder joint was obtained in the five cases of acute bursitis. Complete relief of pain and almost complete return of normal function was obtained in a case of chronic bursitis. From this study it is suggested that 50 U. S. P. units of corticotropin given twice on the first day and once daily on two successive days is sufficient treatment in the usual case. The ease with which corticotropin may be administered and the clinical response obtained make this method of treatment worth while. Insufficient experience has been obtained with hydrocortisone therapy to determine whether this method is superior. Hydrocortisone must be injected directly into the bursa in order to be effective. This in itself is a problem in some instances. Future experience will indicate the proper role of hydrocortisone in the treatment of this condition. Present experience seems to indicate that corticotropin is more effective than roentgen radiation in the treatment of acute subacromial bursitis.

Zinc Peroxide in Surgical Infections

While recognizing that the antibiotics dominate the field, F. L. Meleny (*J.A.M.A.* 149:1450, 1952) calls attention to the fact that medicinal zinc peroxide is still useful in the treatment of surgical infections. Only the medicinal zinc peroxide approved by the United States Pharmacopoeia should be used. It is more effective if activated and sterilized by heating the powder in a dry oven at 140° C. for four hours. After this procedure it may be kept in sterile containers for several months without significant deterioration. The most important conditions better served by medicinal zinc peroxide therapy are undermining burrowing ulcers; synergistic gangrene, only after excision; decubital ulcers; other ulcers in which there is a large element of infection; diabetic gangrene; ulcerative stomatitis; foul-smelling lesions of the mouth and neck, especially in the presence of cancer; radiation burns; ulcerative colitis; and nonvenereal vaginitis. It is useful as a prophylactic around colostomies and after dental extractions. It is also effective for the skin lesions of herpes zoster and poison ivy.

Oral Procaine for Pain and Pruritus

M. E. Ellis (J. Michigan Med. Soc. 51:490, 1952) has found that the oral administration of procaine provided relief of pain in nine cases and relief of severe pruritus in four cases. The procaine hydrochloride powder, in a dosage of 1 to 3 Gm. every three to six hours, was given dissolved in orange juice sweetened with sugar. Over 200 doses were given. Relief of pruritus was obtained in all four cases. The lesions healed in all except one patient who died of Hodgkin's disease. Pain due to various causes (menopause, rheumatoid arthritis, sacroiliac joint, pylorospasm) was controlled by the procaine therapy in seven of the nine cases. In the two patients substernal pain of one and three years' duration, of undetermined origin, was not affected. Three of the patients experienced side effects consisting of transient lightheadedness when the larger doses were taken. Ellis is of the opinion that the systemic effect of the oral procaine in the dosages given was achieved because the liver was unable to detoxify all of the procaine immediately after absorption from the gastrointestinal tract. Hence, enough procaine was present in the circulation to be effective at the site of action.

Topical Use of Antihistamines

The literature concerning clinical results attained by topical application of various antihistamines is reviewed, and the replies of 200 dermatologists to a questionnaire concerning their experience with this therapy are summarized by F. A. Ellis and W. R. Bundick (*J.A.M.A* 150:773, 1952). The replies indicate: 1. Ninety-four per cent of the dermatologists had tried the topical use of the antihistamines, but only 60 per cent still use them, and less than 10 per cent prescribe them often. 2. Those who discontinued or restricted their use did so because they believed this form of therapy was ineffective, tended to aggravate the dermatoses under treatment, or resulted in too high an incidence of contact-type sensitization. 3. Phenindamine tartrate (Thephorin) caused the highest number of instances of contact dermatitis; it was also most frequently mentioned as being the most valuable of the antihistamines. There was a close correlation between the lists of those antihistamines causing contact dermatitis and those considered to be most valuable; that is, the frequency of reactions seemed to increase as the popularity of the medication increased. 4. The over-all sensitizing index may be as high as 8.8 per cent. 5. About one-fourth of the dermatologists considered the local use of the antihistamines to be of value, being of most value in localized neurodermatitis and anogenital pruritus and of least value in moist areas. Some

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physicians place restrictions on the extent or duration of the application. 6. Restriction of their sale by prescription only is advisable.

Gamma Globulin vs Polio

In their preliminary report, W. McD. Hammon and his colleagues (*J.A.M.A.* 150:757, 1952) state that in a series of three controlled field tests to evaluate the prophylactic effect of Red Cross gamma globulin in poliomyelitis, 54,772 children between the ages of 1 and 11 years were inoculated, one-half of them with gamma globulin and one-half with a solution of gelatin. These three field tests were conducted in areas that were experiencing severe epidemics of poliomyelitis. The injections were given to apparently normal, healthy children living in the area, with the full understanding, permission, and cooperation of the parents. Which of the two materials any one child had received was unknown to all—children, parents, and investigators—until completion of a follow-up period considered to be adequate for determining a final diagnosis.

A preliminary tabulation of results as of Oct. 1, 1952, shows that paralytic poliomyelitis had been diagnosed in 90 cases in the study groups. Analysis of these patients on the basis of the type of injection received shows that significant protection was conferred by the gamma globulin. During the first week after injection there was no significant reduction in the number of cases in the group receiving gamma globulin, but the severity of paralysis appears to have been modified. From the second through the fifth weeks highly significant protection was demonstrated. After the fifth week this was less evident, but more definite conclusions regarding the duration of protection and possible modification of disease should be available after a longer period of follow-up. Laboratory studies, still incomplete, should give information regarding the effect of gamma globulin on inapparent infection and the subsequent development of active immunity.

Vitamin B_{12} and Isoniazid

In a communication to the *Lancet* (2:589, 1952), S. Ata and K. Tanaka point out that there have been several reports on the toxicity of isoniazid (isonicotinic acid hydrazide) in animal experiments. These workers have recently carried out an investigation which they hope may give new information. They have studied the effect of various vitamins on the toxicity of isoniazid; vitamin B_{12} was found to diminish toxicity and vitamin B_6 to increase it. Their investigations indicate that a subcutaneous injection of 300 μg. per kg. of vitamin B_{12}, appreciably diminished the toxicity of isoniazid under the experimental conditions.

Chlorophyll Preparation for Wounds

L. R. Carleson and P. Garsten (*Nord. Med.* 47:412, 1952 through *J.A.M.A.* 149:1506, 1952) report that since 1951 they have obtained gratifying results from the use of Septofyllin, a water-soluble preparation of sodium, copper, and chlorophyll plus a quaternary ammonium germicide, in about 100 cases of ulcers, wounds, and burns. Improvement occurred in all but 1 of the 32 cases of chronic ulcers of the leg, of which 2 were due to frostbite, 5 were traumatic, and 25 were varicose and arteriosclerotic. The ulcers had been present from 2 weeks to 12 years. The treatment was applied for as long as two months. In some cases a week elapsed before improvement was evident. The deodorizing and antipruritic effect was obvious, the bactericidal effect was good, and microscopically normal granulation tissue was seen.

Nicotinamide Ointment

An ointment containing four per cent of nicotinamide in a nonfatty, neutral excipient was employed by I Dainow (*Praxis* 41:464, 1952) in 19 cases of pruriginous dermatosis and in 20 cases of hyperkeratosis. Of the 19 patients with pruriginous dermatosis, 2 had insect stings, 3 had urticarious reactions to intracutaneous injections of bee-poison, 3 had anal pruritus, 3 had pruritus vulvae, 1 had pruritus senilis, 3 had lichen planus and 4 had neurodermatitis. Of the 20 patients with hyperkeratosis, 1 had kertoderma of the hands, 3 had keratotic eczema of the hands, 1 had keratotic eczema of the foot, and 15 had tinea pedis. Results were highly satisfactory. When applied to the skin the nicotinamide ointment exerted a rapid and pronounced effect on pruritus. The local action of the nicotinamide resembled that of the drug when given parenterally or orally. It also restored the normal condition of the skin of the patients with hyperkeratosis. This peculiar quality, which was not known before, distinguishes nicotinamide from most of the other antipruritic agents, and particularly from the synthetic antihistamine drugs. Dainow believes that because of its antipruritic, keratolytic, and keratoplastic properties, nicotinamide should be of value in dermatological therapy. Therapeutic trials on a larger scale may increase its indications.

Niacin Amide Hydrobromide vs Bromism

A new approach toward the problem of bromism associated with the use of bromides as sedative is offered in the report of T. S. Feinblatt and E. A. Ferguson, Jr. (*New York State J. Med.* 52:2017, 1952). They found that bromide sedation without side-effects could be attained through the use of niacin amide hydrobromide. In their investigations, 40 female and 10 male subjects were treated with equivalent doses of triple bromides and with bromides plus niacin amide hydrobromide. Feinblatt and Ferguson found that almost every case of untoward reaction due to bromide therapy cleared when bromides were given together with niacin amide hydrobromide. This demonstrated the salutary effect of niacin amide hydrobromide in clearing bromism while continuing bromide therapy.

Treatment of Acne

Acne vulgaris, says E. C. Fox (*Clin. Med.* 59:169, 1952) is not an insignificant or negligible disease. For this condition, the most important therapeutic measure is frequent cleansing with a nongreasy detergent. Avoidance of all fatty and greasy applications and elimination of all greasy foods from the diet are important general measures. The routine treatment includes: (1) Soap and water cleansing 2 or 3 times a day. (2) Supplementary cleansing of the skin with alcohol will reduce the number of comedones and the amount of infection. (3) Careful removal of comedones, and evacuation of cystic and pustular lesions. (4) Use of resorcinal and/or sulfur lotion or paste at night. (5) A low fat diet. (6) Weekly shampoo.

In addition to this routine, special measures for the more severe cases are as follows: (1) Vitamin A, 50,000 units 1 to 3 times daily. (2) Thyroid for lipoid dysfunction. (3) Tuberculin intradermally. (4) The sulfonamides, antibiotics and arsenic in severe nodular and cystic acne. (5) Estrogens, when other measures are ineffective for the female patient over 17 years of age. (6) Roentgen therapy for cases of severe disease with deep papules, pustules, and cystic lesions when there is unsatisfactory response to other measures, but preferably not until the patient is 17.

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In addition to the above mentioned advantages, **MODULAN** deposits an emollient, protective film and is therefore highly effective in baby oils, hair dressings, soaps, shampoos, oil-in-water creams and lotions, lipstick, and other cosmetic and pharmaceutical products.

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Compounder's Corner

Tooth Lacquer

According to the claims of J. Singer in Austrian patent 167,113, tooth lacquers for cosmetic purposes may be made from mixtures consisting of:

Amyl acetate	**40-50 per cent**
Celluloid	**20-30 " "**
Zinc oxide	**5-10 " "**
Acetone	**8-12 " "**
Castor oil	**4-7 " "**

If desired, insoluble dye pigments may be mixed with these ingredients.

Lipstick Fundamentals

In presenting the fundamentals in the manufacture of lipsticks, W. P. Pepper (*Perf. & Essent. Oil Rec.* 43:123, 1952) states that the ideal lipstick (which actually does not exist) should be: (1) Of attractive appearance. (2) Easily applied to the lips to give an even coloring without any visible fragments of lipstick becoming detached in the process. (3) Honest—*i.e.*, the color imparted to the lips is the same as that of the lipstick itself without change of color as the stain wears off. (4) Of pleasant taste and feel on the lips. (5) Of good persistance and not readily transferred to cups, cigarettes, or the like. (6) Only slightly affected by temperature differences from 10° to 40° C. (7) Even when aged free from sweating, bloom, changes in hardness and from the development of hard particles or undue softening or rancidity. (8) Of firm but not-brittle texture, *i.e.*, it neither bends nor breaks with normal usage.

According to Pepper, the most widely used raw materials are beeswax, castor oil ozokerite, ceresin, paraffin wax, oleyl alcohol, cetyl alcohol, lanolin, wool wax, mineral oil, butyl stearate, cocoa butter, stearine, carnauba wax, esters of polyhydric alcohols, eosines and a vast variety of solid pigments including titanium dioxide. Of these materials those common to the majority of lipsticks are beeswax, castor oil, eosines, pigments and at least one of the ceresin, ozokerite, paraffin wax group.

Following a brief consideration of the individual raw materials, Pepper discusses the manufacture of lipsticks. He stresses the importance of completely dissolving the eosine. To the end eosine should be thoroughly wetted with a good eosine solvent, the castor oil should be added and the vessel should be heated, by means of a water bath, to a temperature of 80° C. and stirred from time to time for a period of at least an hour. The solution should be filtered through closely woven cloth and the pigments should be added to the eosine solution. The mixed waxes and waxlike materials should be melted together in a separate water-heated vessel and the molten waxes should be filtered on to the pigment eosine mixture. At this stage the perfume may be added and the mass should be repeatedly milled by means of a cone mill or a triple roller mill until the color is perfectly uniform and no pigment particles of appreciable size can be detected. The mass may be stored until required for molding. Molding may be achieved by pouring the molten mass into a clean, slightly warm split-mold so that the holes are completely filled and there is some surplus lipstick on the top of the mold. The split-mold may be placed on a block of ice or in a refrigerator to hasten the solidification. The surplus lipstick is then scraped from the top of the mold and the mold is opened after which the lipstick may be removed and hand-filled into cases.

An alternative method of molding is to use a water jacketed mold which consists of a sealed rectangular tank through which a number of tubes pass vertically. The tubes are of the diameter of the lipstick and their tops and bottoms are flush with the top and bottom of the tank. Such molds generally mold 36 or 72 lipsticks at a time.

Pepper advises that the appearance of lipsticks from a split mold is commonly improved by flaming, that is, quickly passing them through a small flame to eliminate the mold seams and finger marks. Lipsticks molded on a water-jacketed mold should not be flamed as there should be no finger marks and no mold seam.

It is also noted that the poor results that are sometimes obtained from a good formula may be due to air entrapped in the mass. This trouble can be reduced by keeping the mass molten and gently stirred for a considerable period before molding. In some cases, simply allowing the mass to age for a week before molding greatly reduces this trouble. Another treatment which is sometimes practized is to place the molten mass in a vessel which can be evacuated by means of a pump when most of the air rises to the surface in the form of large bubbles.

Cold Waving

In his discussion on hair structure and the formulation of permanent waving solutions, J. L. Stoves (*Perf. & Essent. Oil Rec.* 43:232, 1952) states that in cold waving a solution of sodium or ammonium thioglycollate is used, the general time of treatment depending on the concentration of reagent used and being adjusted for coarse or fine hair according to the results of a test curl. Rebuilding of fibre cross-linkages and "neutralization" of excess thioglycollate is achieved by means of rinses with solutions of oxidizing agents.

Solutions of hydrogen peroxide acidified with tartaric acid, as specified in U. S. patent 2,350,178, or solutions of ammonium, alkali earth iodate or bromate, as described in U. S. patent 2,564,722, are the oxidizing agents which have found practical application. The former of the two U.S. patents cited employs a solution of:

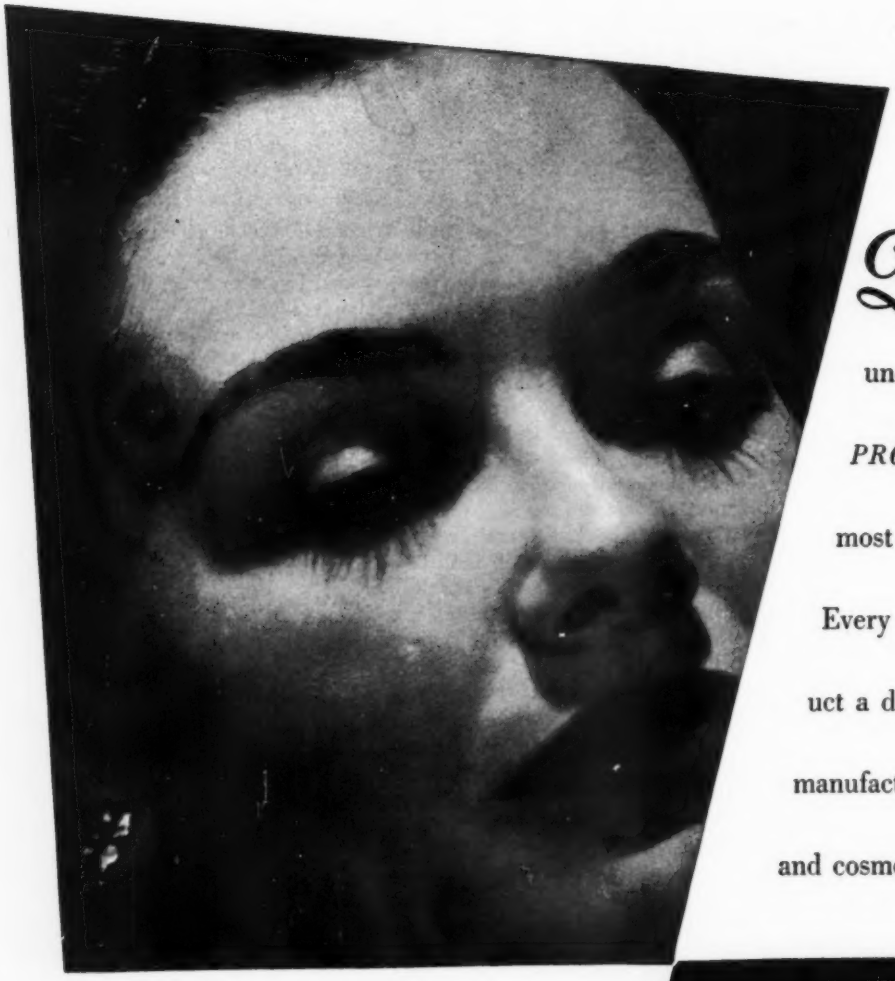
Thioglycollic acid	**10 Gm.**
Sodium hydroxide	**7 Gm.**
Hydroxylamine sulfate	**10 Gm.**
Water	**100 cc.**

This is applied to the hair which is stretched around curling rods. After the elapse of 15 minutes the following solution is applied:

Water	**500 cc.**
Hydrogen peroxide (20 vol.)	**500 cc.**
Tartaric acid	**30 Gm.**

Heat is generated during the oxidation and in 5 minutes the hair becomes warmer than body temperature. When cool, the hair is washed, and a soft, bright permanent wave results.

A commonly used reducing solution contains some six per cent ammonium



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thioglycollate, pH 9.50, the time of treatment being ½ to 1 hour. In preparing these solutions only high grade chemicals should be used. In particular dithiodiglycollic acid which interferes with the efficiency of the waving solution, and salts of copper, manganese and iron which decompose thioglycollates catalytically, should be reduced to the absolute minimum. Iron salts also give rise to red colored solutions with thioglycollate.

Stoves calls attention to the recently marketed cold waving solutions which do not require a neutralizer. This development opens up a new field of investigation for the manufacturers of cold wave solutions. In Stove's opinion, the possible lines of approach are: (1) Use of a reagent which during reduction of the keratin disulphides liberates a rebuilder so that cystine linkage rebuilding follows fairly quickly after the breakdown necessary for polypeptide reorientation in the stretched fibre; (2) Use of thiols other than thioglycollates. Mercaptans which produce the requisite degree of cystine linkage reduction without causing excessive fibre swelling will have a much less drastic action than thioglycollates. In such cases no deep-seated attack on the fibre would occur and it should suffice merely to remove excess reagent by washing with water. Work on thiolactic acid is of interest in this connection; (3) Formulation of thiol solutions which can be removed by water washing, the hair being allowed to dry slowly at room temperature during which period aerial oxidation will convert residual mercaptan to disulphide and also give rise to some degree of cystine linkage re-formation in the hair; (4) Use of a catalyst, such as a manganese salt, which is added to the thioglycollate immediately before use and so initiates decomposition of the thiol compound, conditions being so arranged that by the time permanent waving has occurred no free thioglycollate remains. The hair would then only require a straightforward water wash.

T.G.A. Standard for Ethyleneglycol Monostearates

The Toilet Goods Association Specification No. 42 provides standards for ethyleneglycol monostearate, non-self emulsifying. This material is defined as a wax-like solid containing not less than 50 per cent of the monostearate. Requirements are given with respect to color, odor, solubility, melting point, residue on ignition, acid value and titer. Standards are also provided concerning the saponification value, acid value and iodine value of the separated fatty acids. The requirement and method for determining the pH of a 3 per cent aqueous dispersion at 25° C. are indicated. Methods for determining the free glycol and monostearate content are given in detail in the specification.

Skin Protective Creams

In a study of industrial barrier creams for the protection of workers against solvents, H. von Czetsch-Lindenwald (*Fette u. Seifen* 53:751, 1951) tested various formulations against common industrial solvents. He found that the following were the most effective as skin protectives:

I

Gelatin	**4 parts**
Glycerine	**30 "**
Water, to make	**100 "**

II

Sodium polyacrylate	**10 parts**
Glycerine	**30 "**
Water, to make	**100 "**

III

Cellulose ether (Polyfibron)	**4 parts**
Glycerine	**30 "**
Water, to make	**100 "**

Pearl Essence

Pearl essence, which finds various interesting applications, including nail lacquers, is discussed in considerable detail by A. J. Krajkeman (*Manuf. Chem.* 23:278, 1952). Pointing to the many attempts to reproduce the appearance of pearls, he notes that, so far, only one material has been found which truthfully reproduces the beautiful dull lustre of pearls; this is the silvery substance which is found in the skin and in the scales of fishes. Since the end of the seventeenth century this substance has been produced commercially and imitation pearls have been made from it. Although its manufacture started in Europe, genuine pearl essence is chiefly produced in the United States.

According to Krajkeman, the name "pearl essence" was given by the U.S. Bureau of Fisheries to a suspension in a suitable carrier of guanine crystals derived from fish scales. Dilute ammonia was used in early days, but today the most common medium is amyl acetate or a solution of nitrocellulose or cellulose acetate. Occasionally the old name "essence d'orient" is used for pearl essence and sometimes it is also called "fish silver."

In the U.S., pearl essence is manufactored chiefly from the scales of the herring (*Clupea harengus*), although some pearl essence is also manufactured from the scales of the glut herring, which is also called the alewife (*Pomolobus pseudoharengus*). The scales of the shad (*Alosa sapidissima*) and the hiskory shad (*Pomolobus mediocris*) are also being utilized although on a much smaller scale than those of the herring and the alewife.

Various methods for making pearl essence are described by Krajkeman who states that a modern pearl essence is usually a suspension of 11 per cent quanine crystals in a lacquer. The pearl lacquer for actual use contains about 5 per cent of this pearl essence diluted with a cellulose lacquer which should contain a high proportion of active solvent.

The effect of pearl essence is due to the reflection of light from the guanine microcrystals. This will be at its maximum when the crystals are all pointing in one direction; in other words, the better orientated the crystals are, the better will be the effect produced by the lacquer.

Skin Care Cosmetic

In German patent 812,341 (through *Chem. Abstr.* 46:9268, 1952), W. Greuer describes a so-called cosmetic for skin care that is designed to be effective against eczema and fungus infection. The process of preparing this cosmetic comprises stirring oak-bark extract with a protective colloid, such as methylcellulose, and introducing the mixture into a warm liquid gelatin solution. After stirring, the mixture is allowed to cool to produce a jelly. To increase the suppleness and the hygroscopicity of the jelly, a softening agent, such as glycerine, and sodium chloride may be admixed.

A suitable composition is prepared by boiling 1,000 Gm. of oak-bark for one-half hour with 3 liters of water, removing the supernatent layer by decantation and mixing this extract with the following ingredients:

Oak-bark extract	**300 Gm.**
Glycerine	**150 Gm.**
Sodium chloride	**5 Gm.**
Methylcellulose	**5 Gm.**
Gelatin	**40 Gm.**
Water	**500 Gm.**

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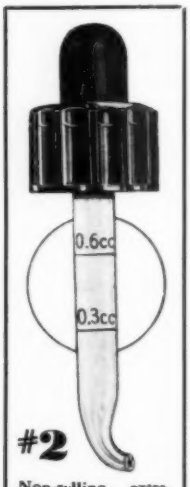

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Patent Thoughts and Trends

*by Thomas Cifelli, Jr.**
PATENT ATTORNEY

STREPTOMYCIN, THE NEWSMAKER

It is now more than four years since the basic Waksman and Schatz U.S. Patent on streptomycin was issued. It is two years since the controversy between the co-inventors was settled. Yet streptomycin is still very much in the news, patentwise and otherwise.

Streptomycin as a General Newsmaker

As this is written, everyone probably already knows that Professor Selman Waksman of Rutgers has just won the Nobel Prize in Medicine. Since the award did not specifically point out the exact basis on which it was made many people have assumed that it was given to Professor Waksman because of his work on streptomycin. This may indeed be the case, though Waksman was already well-known, at least to those interested even casually in microbiology, long before the streptomycin discovery.

Whatever the basis for the reward, Waksman, his school, and his profession of chemistry all are deserving of commendation.

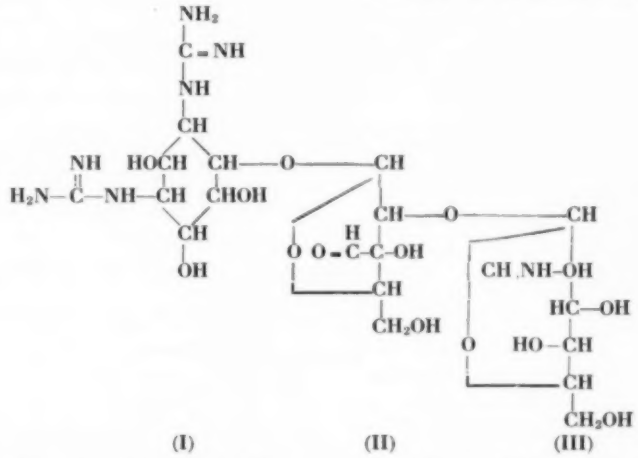
The question of commendation has introduced, unfortunately, the only unpleasant note in the selection of Professor Waksman as a Nobel prize winner. That note stems from Dr. Schatz's faculty colleagues in the National Agricultural College, Pennsylvania. According to the press, Dr. Schatz's colleagues have called for the inclusion of Dr. Schatz in the award on account of the part played by Dr. Schatz in the streptomycin discovery. It will be recalled that the settlement of the Waksman-Schatz controversy provided that Dr. Schatz was to be entitled not only to legal credit but also to scientific credit as the co-inventor of streptomycin.

Streptomycin as a Patent Newsmaker

Even the U.S. government is interested in streptomycin as a subject for research study and patent protection. This is evidenced by the fact that it recently became the owner of U.S. Patent No. 2,617,755, issued to Robert G. Benedict and Frank H. Stodola, the title of the patent being Antibiotic Production from Streptomyces Griseo-Carneus.

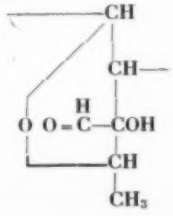
Strictly speaking, the Benedict-Stodola invention does not deal with streptomycin but with hydroxystreptomycin. As can be seen from the following structural formula and explanation, the difference in chemical structure between the streptomycin and hydroxystreptomycin is slight.

The structural formula of hydroxystreptomycin is given as follows in the patent:



(I) (II) (III)

The above formula contains three major structural units or portions labeled I, II and III, which may be termed the streptidine, streptose and glucosamine portions, respectively. Our new compound differs from streptomycin in the streptose portion, that portion of the streptomycin molecule being as follows:



In the words of the inventors,

"For production of hydroxystreptomycin the culture medium employed may vary widely. The organism requires an assimilable carbon source, an assimilable nitrogen source and inorganic nutrient salts. The carbon source may be a carbohydrate or carbohydrate derivative. For reasons of economy and convenience we prefer to employ glucose or commercially available products containing glucose, molasses or molasses residues. We may employ as the source of assimilable nitrogen such protein-aceous materials as soybean meal, corn steep liquor, distillers' dried solubles, peptone, yeast autolysate, and the like. We have obtained very good results with soybean meal and prefer to use that material because of its abundance.

"The fermentation is carried out under submerged aerobic conditions. In shaken flask cultures the organism produces good yields, of the order of 300-600 micrograms of hydroxystreptomycin per milliliter of medium. The period of cultivation is 3-6 days, the optimum time being about 3 days. The temperature of cultivation should lie within the range of 25°-35°C. for best re-

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sults. Although the peak yield appears to occur in about 3 days, we have found that the yield does not fall off rapidly but stays constant for periods up to 6 days. The culture medium containing hydroxystreptomycin possesses bacteriostatic properties which inhibits S. GRISEO-CARNEUS itself after about the sixth day of incubation."

Examples 1 and 2, taken from the patent, follow:

EXAMPLE 1

An aqueous medium was prepared having the following composition:

	Percent
Soybean meal	2
Distillers' dried solubles	0.5
Glucose	1.5
Calcium carbonate	0.1
NaCl	0.5

This medium was sterilized and inoculated with germinated spores of *S. griseocarneus*, and the culture agitated and aerated for 3 days. At the end of this time the culture liquor was separated from the mycelial growth and treated with absorbent carbon. The carbon was washed and eluted with acidified ethanol. The antibiotic was recovered from the eluate by evaporation, further purified by chromatographic methods and recovered as a white solid, with an activity corresponding to that of crystalline streptomycin sulfate. When tested against various test organisms, the antibiotic exhibited a bacteriostatic spectrum substantially identical with streptomycin.

A characteristic spectrum for hydroxystreptomycin is showni n Table I. *S. griseo-carneus* was streaked across the center of two different agar plate mediums and allowed to grow for 4 days at 30° C. Twelve test organisms were then streaked perpendicular to the line of growth of the streptomyces, and the distances of inhibition measured, after 1 day at 37° C.

Table I

	NRRL	Mm. Inhibition Medium No. 1	Medium No. 2
Pseudomonas aeruginosa	B-25	20+	10
Bacillus subtilis P	B-971	30+	33
B. subtilis (streptothricin resistant)	B-972	30-33	17-19
Bodenheimer organism (streptomycin resistant)	B-962	0	0
Aerobacter aerogenes	B-199	30+	24
Condida albicons	Y-477	20+	13
Staph. aureus	B-313	25+	20-25
Esch. coli	B-766	30	17-23
Brucella bronchiseptica	B-140	25	13
Staph. aureus (streptomycin resistant)	B-313-R	0-3	0
Mycobacterium smegmatis	B-612	35+	35
Sarcina lutea	B-1018	20+	23-27

EXAMPLE 2

An aqueous medium was prepared having the following composition:

	Percent
Soybean meal	2
Distillers' dried solubles	0.5
Sodium chloride	0.5
Calcium chloride	0.1
Dextrose	1.5

This medium was inoculated with a germinated spore suspension of STREPTOMYCES GRISEO-CARNEU, NRRL B-1068 and agitated in shaken flask cultures for several days. Assays were made after 72, 96, and 120 hours fermentation. The results of this example are tabulated below. Assays were made by a disc agar plate method employing STAPHYLOCOCCUS AUREUS NRRL B-313 (FDA No. 209-P) as the test organisms. Assay values are determined in micrograms of streptomycin base by evaluating the unknown preparations against a series of standards prepared from the FDA streptomycin A working standard with an assigned potency of 800 micrograms streptomycin base per milligram.

Table II

	Assay (micrograms per ml. streptomycin base)		
Organism	72 hrs.	96 hrs.	120 hrs.
NRRL B-1068	260	401	387
NRRL B-1068-(15)[1]	587	650	492
NRRL B-1068-(G)[1]	516	651	464
NRRL B-1068-(J)[1]	428	660	321

[1]Strain selection—single colony isolates.

While the disclosure of the patent refers to hydroxystreptomycin as a novel product, the claims are all restricted to process protection. Claim 1 is reproduced in full:

> A process for producing hydroxystreptomycin which comprises cultivating STREPTOMYCES GRISEO-CARNEUS in a medium comprising an assimilable carbon source and an assimilable nitrogen source, separating the mycelial growth from the medium and separating the hydroxystreptomycin by adsorption and recovering the adsorbed hydroxystreptomycin.

A second recent patent dealing with streptomycin is U.S. 2,617,799, issued to two Merck inventors, Robert E. Jones and Robert G. Bailey.

The Jones-Bailey invention is concerned with the decolorization of streptomycin and derivatives. Aqueous, aqueous-alcoholic, or alcoholic streptomycin and dihydrostreptomycin solutions are treated at an acid pH of about 1.5-6.0 with oxidizing agents such as chlorine, bromine, potassium permanganate, sodium dichromate, and hydrogen peroxide until substantially all of the color disappears.

It is said that there is little if any loss of either streptomycin or dihydrostreptomycin as a result of this treatment even though these antibiotics are known to be vulnerable when exposed to oxidants.

Example 6, dealing with the decolorization of neutral streptomycin by the preferred oxident, chlorine, follows:

20 cc. of a neutral streptomycin eluate obtained from the elution of a carboxylic acid type resin was placed in a 125 cc. Erlenmeyer flask. The solution contained 13,110 γ/cc. of streptomycin. The flask was swirled while gaseous chlorine was bubbled through a 6 mm. tube at a rate of 510 bubbles per second for about 0.5 minute until maximum decolorization was achieved. The color of the solution changed from brown to very light yellow. The decolorized solution was assayed and found to contain 13,110 γ/cc. of streptomycin, indicating no measurable inactivation of streptomycin.

RECENT PATENTS

***2,614,962,3*—The Kendall Company—Pharmaceutical Composition for use in the treatment of Keratin.**

***2,615,106*—Knoll A. G. (Germany) Method of Extracting Cardioactive Glycosides from Bovica Volubilis.**

***2,615,017*—The Upjohn Co.—Steroids.**

***2,615,020*—G. D. Searle & Co.—Derivatives of 2-Thio-6-Amino-1,2,3,4-Tetrahydro-2,4-Pyrimidinedione.**

***2,615,024*—Sterling Drug—Basic Esters and Amides of 7-substituted-Coumarin-4-Acetic Acids.**

***2,615,037-9*—Dow — Amidothiophosphates.**

***2,615,040*—The Upjohn Co. Synthesis of Folic Acid Intermediates.**

***2,615,041*—G. D. Searle & Co.—Derivatives of 2-Methyl-2-Formyl-7-Hydroxyoctohydrophenanthrene - 1 -Acetic Acid.**

***2,615,823*—Niagara Alkali Co.—Alkoxychlorobenzenes Bactericides and Fungicides.**

(Continued on page 848)

Animal Health

Antibiotic Feeding to Dairy Cows

Following a consideration of the benefits to calves receiving antibiotics, F. Wright (*Mass. Dairy Digest*, Sept. 16, 1952) discusses the effects of antibiotic feeding to dairy cows. He stresses that, because of the possibility of the accidental or intentional feeding of antibiotics to cows, it is important to know to what extent these antibiotics will affect milk production, alter feed consumption and be transmitted into the milk. Enough experiments have been conducted at Cornell University to allay many fears as to the dangers involved. Feeding as high as 4 to 6 times the recommended level, 6 cows produced essentially the same amount of 4 per cent fat corrected milk as they did during periods of no antibiotic supplementation. There were no deleterious effects observed on feed consumption during these periods. No aureomycin has been found in the milk of cows that have received as much as 6 times the recommended level of feeding. Likewise, cheese-starter activity was not depressed in milk of cows fed at this level.

From these studies, it is concluded that there is relatively little danger of hurting either the cows or the milk by accidentally feeding commercial feeds containing aureomycin. However, based on present evidence, there is no reason to include antibiotics in dairy feeds.

Bacitracin Pellets for Pig Growth

The use of implanted bacitracin pellets to stimulate pig growth was described by J. P. Pensack and W. E. Gerard at the 122nd meeting of the American Chemical Society in Atlantic City. They pointed out that under practical farm conditions, effective antibiotics added to the creep rations of suckling pigs have stimulated growth, improved feed efficiency, reduced the number of runts, and helped in controlling certain forms of scouring. Since the baby pig does not eat any appreciable amount of feed during the first two or three weeks of life and cannot get antibiotics from the mother's milk unless uneconomically high levels are fed to the sow, a method of supplying the antibiotic was devised by implanting subcutaneously a compressed pellet of pure bacitracin near the base of the ear where circulation is poor. This pellet is slowly absorbed, furnishing the baby pig the necessary bacitracin during this critical growth period.

Bacitracin pellets containing 1000 units each were implanted in a number of two-day-old pigs. One group was fed a creep ration containing no antibiotic. The second group had a creep ration containing a mixture of penicillin and bacitracin. At the end of 56 days the implanted pigs of the first group weighed 10.8 per cent more than the controls, while the implanted pigs of the second group weighed 17.7 per cent more than their controls.

Butynorate as an Anthelmintic for Poultry

The data presented by K. B. Kerr (*Poultry Sci.* 31:328, 1952) show that a tetravalent tin compound, di-n-butyl tin dilaurate, for which the name "butynorate" has been coined, possesses anthelmintic properties against the poultry cestode, *Raillietina cesticillus*. When administered as a single dose by capsule 75 mg. per kg. body weight is the minimal dose found to be effective. The compound is also an effective anthelmintic when it is administered in the feed. Although sufficient birds were not tested to determine a definitive chemotherapeutic index, the data which are presented suggest an index of 20. It is obvious that butynorate has a wide margin of safety for poultry.

When butynorate was administered alone or in combination with nicotine and phenothiazine no indication was found of an effect on the egg production of laying birds. No incompatibility between butynorate, nicotine and phenothiazine was found. In a medicated feed containing a formulation of these three compounds each compound retained its anthelmintic properties. Therefore, a feed-mix formulation containing these three substances would be a practical anthelmintic for the removal of certain cestodes from poultry, particularly *Raillietina cesticillus*, the large round worm, *Ascaridia galli*, and the cecal worm, *Heterakis gallinae*.

Terramycin and Serum for Shipping Fever

Shipping fever, says G. E. Hawley (*J. Am. Vet. Med. Assoc.* 121:371, 1952) is an insidious disease. Any factor, such as inclement weather, branding, dehorning, shipping, chilling, or lack of feed may cause an upset and contribute to its development in calves. In Hawley's opinion, the losses from shipping fever should not only include deaths, but also the shrinkage and the growth setback that the calves undergo. He found that a higher rate of recovery was obtained when treatment included terramycin injections. After several trials, the most satisfactory results were obtained by using, on the first day, 0.5 Gm. of terramycin intravenously with 30 cc. of hemorrhagic septicemia antiserum. This was followed twenty-four hours later by an additional 0.5 Gm. of terramycin intravenously (either 5 per cent dextrose or normal saline was used as the diluent for the terramycin). This formula became routine for 350- to 400-pound calves. Because the intravenous method is slow and literally impossible in freezing range conditions, the terramycin solution and the serum were often given intraperitoneally. This procedure took less time and the response seemed to be as satisfactory as from the intravenous method.

On the basis of observations on approximately 4,500 calves that were treated for shipping fever, Hawley reported that the recovery of the calves treated with the terramycin and serum combinations is "almost dramatic." Several of the large herds of 400 to 900 calves had incurred death losses of 25 to 50 calves prior to treatment. In several cases, no further losses from shipping fever were reported after the second day following treatment. Actual recovery of calves treated with terramycin and serum or foreign protein has been approximately 96 per cent. Calves which received terramycin and outdated hog cholera antiserum responded most favorably after treatment.

Hawley feels that perhaps even more

important than the immediate recovery has been the way the calves matured throughout the following summer. The owner reports that he can scarcely find a half dozen poor calves in the lot of 830 in which 60 had died prior to treatment.

Vaccinating Time for Pigs

In veterinary circles, says R. R. Dykstra (*Vet. Med.* 47:251, 1952) there is still a good deal of discussion about the proper time to vaccinate young pigs; before or after weaning. As nearly as we have been able to determine it seems that immunization with hog cholera anti-serum and virus at approximately six weeks of age—usually pigs are weaned at eight weeks—is the best time as such vaccination confers a solid, lasting immunity. Concurrent infections frequently interfere with the immunizing process if vaccination is delayed until pigs weigh 75 pounds.

Warfarin Poisoning in Dogs

The use of warfarin, 3-(alpha phenyl-beta acetyl ethyl)-4-hydroxycoumarin) in the extermination of mice, rats, and other pests of the rodent family has not been regarded with alarm, except where this preparation has been used indiscriminately. While there have been reports of deaths of household pets following ingestion of this compound, these incidents are comparatively few in relation to its growing popularity for ridding premises of rodents. This may be due to the fact that when warfarin is employed in the proper amounts, there is comparatively little danger to pets. Yet, this is a problem of the veterinarian once a dog has been poisoned, since the animal is usually presented in a serious, if not moribund, condition.

Important, therefore is a series of 61 cases of deliberate and malicious poisonings of dogs as described by B. S. Klausman and H. W. Brown (*Vet. Med.* 47:235, 1952). The first seven dogs died because of failure to correlate the cases or to identify the poison. After the poison was identified, 47 of the remaining 54 dogs which were treated were saved. All dogs presented hemorrhage in some form, either in bloody vomitus and stools or in a final fulminating oral hemorrhage immediately before death. In addition, all animals showed cyanosed membranes, rapid pulse, shallow respiration, shock and subnormal temperatures. Treatment with Koagamin, 2 cc. intravenously or 2 cc. in 200 to 300 cc. glucose-saline solution intravenously and vitamin K intramuscularly, was successful in saving 47 animals. Routine measures were employed thereafter. Three dogs in this series died when Koagamin was not available.

Vitamin Fortification of Animal Diets

As reported in *Industrial and Engineering Chemistry* (30:4258, 1952), D. Catron has told the Animal Nutrition Research Council that he believes the industry may be able to save considerable protein by resorting more and more to vitamin fortification. Examination of the older swine rations, for instance, shows that relatively high levels of protein concentrates were effective because they supplied vitamins needed for optimum growth. Riboflavin and pantothenic acid were two of the vitamins involved. Catron finds that with ample vitamin fortification, much lower levels of protein can be used. He also notes that pigs require the same 10 essential amino acids as do rats. In practical rations, the limiting amino acids are likely to be: first, lysine; second, methionine; and third, tryptophane. Only a small amount of lysine is needed to supplement rations; excessive additions are harmful.

Catron has also found that antibiotics appear to spare proteins. Optimum early growth of pigs is obtained with 14 per cent protein when antibiotics are used; without antibiotics, 18 per cent protein is required.

Bacitracin Pellets for Pig Scours

As noted by W. J. O'Rourke (*Vet. Med.* 47:482, 1952) baby pigs are highly susceptible to scours and dysentery. Damage from such upsets is not limited to the period of observed derangement, but is continued during the period of recovery when the inflamed tissues are returning to normal function. O'Rourke found that bacitracin pellets implanted at farrowing time or during the first few days of life help baby pigs to avoid some of the scours and the common sequelae of digestive disturbances. The dosage, by this parenteral route, is not sufficient to exert a bacteriostatic, much less a bactericidal, effect. The results indicate a beneficial effect on growth, which is probably due to uniformly high efficiency of the digestive tract as a result of reduced incidence and severity of intestinal disturbances.

While pellets of bacitracin, implanted subcutaneously at any point of moderate circulation, offer a new approach to the prophylaxis and therapy of baby pig scours, it is stressed that the pellets are in no sense a panacea or cure-all for all the diseases to which baby pigs are subject. They will not replace good sanitation and hog management, but they do permit a somewhat more favorable prognosis in some of the problem herds where digestive troubles have appeared in the face of the usual farm management procedures.

Iodine in Control of Lungworm Infection

In Germany, H. Behrens (*Tierarztl. Umschau* 6:394, 1951 through *Vet. Med.* 47:255, 1952) found that a two per cent colloidal iodine suspension gives excellent results when used for the removal of the large lungworm, *Dictyocaulus filaria*, and good results for the small lungworm, *Synthetocaulus spp.* in sheep. The suspension is given as an intratracheal injection in doses of 3 to 8 cc. for lambs, 12 cc. for yearlings, and 15 cc. for mature sheep. Dosages must be reduced to three-fourths or two-thirds of these amounts when weak or very sick animals are treated. The treatment may be repeated at one- to two-weeks intervals, if indicated. Of more than 3,000 sheep used in the experiment, only two showed spasms and breathing difficulties. Coughing, when observed, was of short duration.

Sulfaquinoxaline Effects on Egg Production and Hatchability

As noted by S. P. Smith, J. P. Delaplane and W. H. Wiley (*Poultry Sci.* 31:679, 1952) sulfaquinoxaline is now in common use for the prevention and control of coccidiosis in chickens. It has also been found of value in fowl cholera prevention and control. Because of this wide use, a study was conducted to determine the effects on egg production and hatchability of feeding sulfaquinoxaline at the 0.033 percent level under controlled conditions. The investigators found that from a practical point of view, the use of sulfaquinoxaline at the 0.033 percent level on a continuous feeding basis had no adverse effect on mature birds. There was a slight difference, favoring birds on non-medicated feed, in hatchability, fertility and egg production. These differences, however, were inconsistent and no greater than differences one would expect between two groups of birds of similar breeding on identical feed. Fertility and hatchability figures in both groups of birds were very good. The slightly higher rate of production in the birds on non-medicated feed was not statistically significant.

Perfumer's Shelf

Components of Pouliot Mint

J. Spiras (*Ind. parfum.* 6:206, 1951) has found that the essential oil from pouliot mint from Morocco contains two components not previously reported, namely, two to three per cent of cineole and one to two per cent of carvacrol. The latter is probably derived from the isomerization of carvone which is derived from the oxidation of *d*-limonene by air. Under such conditions limonene gives carveol and carvacrol.

Oil of Ormensis Multicaulis

A report on the essential oil from *Omensis multicaulis* Braun-Blanquet and Maire, from Morocco, has been made by R. Dolon, H. Pourat and M. M. Janot (*Ann. pharm. franc.* 10:111, 1952). The plant is a camomile, from which the essence was prepared by distillation of the total plant with a yield of 0.1 per cent. It showed the following characteristics:

Specific gravity	**0.912**
Index of refraction	**1.4790**
Specific rotation	**6° 21′**

Fractionation yielded four fractions. The first fraction contained acetic acid, acetone and hexadiene, also products of oxidation of the latter. The second fraction contained *alpha*-pinene, cineole and *d*-limonene. On saponification, the third fraction yielded acetic acid and borneol. Optical data suggested the presence of isobornyl acetate. The fourth fraction consisted of sesqui and deterpenes and gave various fractions; one of which contained a blue-green azulene.

Antioxidants of Natural Spices

In the studies reported by J. R. Chipault (*Ann. Rept. Hormel Inst., Univ. Minn.* 150-51, p. 31), the antioxidant properties have been determined of spice fractions, obtained by extraction with petroleum ether and alcohol. In general only a portion of the antioxidant present in the ground spice was removed in the solvents. In several instances, however, the extracts were more potent than the spice itself, probably because of the presence of prooxidants in the ground spice. Citric acid acted as a synergist with some spice fractions but had little or no effect on others. When incorporated in pie-crust dough, most spices were either inactive or very slightly antioxygenic. Oregano, rosemary, sage, and thyme, however, exhibited some carry-through of their antioxidant activity into the baked product. Samples of sage and rosemary have been extracted with various solvents in order to concentrate and isolate the compounds responsible for the antioxidant activities of these spices. Sage seems to contain at least two primary antioxidants and no synergist. In both sage and rosemary the active materials were concentrated in the fractions soluble in alkali and were not associated with the compounds responsible for the characteristic odors of the spices.

Neroli Oil from Southern France

In commenting on neroli oil, J. Bather (*Soap, Perf. & Cosmetics* 25:731, 1952) states that a crop of about 1,100,000 kilos of orange blossoms is expected to be harvested in southern France. The average yield of flowers from each tree is about 10 to 15 kilos, the yield of oil being dependent upon the conditions and time of collection. Usually from one to one and a half kilos per thousand kilos of flowers can be obtained by the usual distillation method, while the aqueous distillate known as orange flower water still enjoys a ready sale.

The average composition of neroli oil from the Maritime Alps region is given in the table below:

Constants	Water-Insoluble Portion	Water-Soluble Portion	Complete Oil
Specific gravity	0.872 to 0.880	0.910 to 0.945	0.889
Optical rotation	+2° to +6°	−3°20′ to −1°5′	−4°6′ to 0°
Refractive index	1.467 to 1.474	1.480 to 1.500	1.477
Acid value	1.5 to 1.7	0.7 to 1.05	0.7 to 1
Saponification value	30 to 55	60	70 to 95
Acetylation index	120 to 150	164 to 175	163 to 179
Solubility in			
Alcohol 90°	0.2	I	I
Alcohol 85°	0.5		
Alcohol 80°	1 to 1.6		
Free alcohols	12 to 20%	35 to 40%	30 to 35%
Methyl anthranilate	0.5 to 1.5%	10 to 16%	3 to 4%

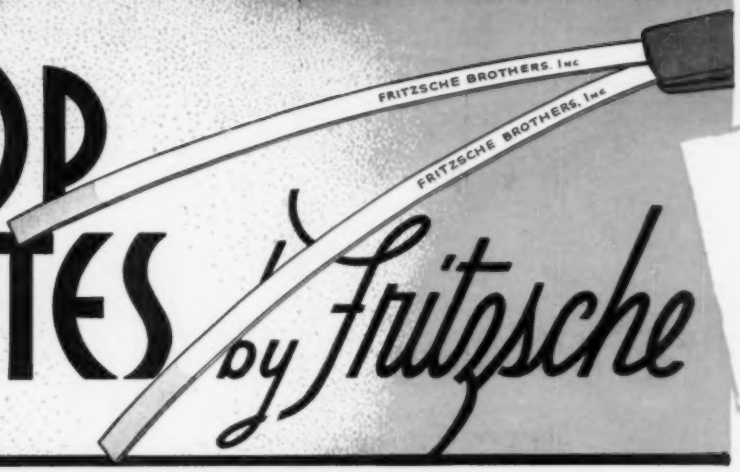
In discussing the constituents of French neroli oil, Bather states that the total terpenes, comprising 35 per cent of the oil, include pinene, camphene, l-limonene, dipentene, paraffins. Alcohols present include phenylethyl, l-linalool (30 per cent) nerol, d-terpineol (2 per cent), nerolidol, geraniol. Esters include: linalyl acetate (10 to 18 per cent), methyl anthranilate (0.5 to 1.5 per cent), benzoates, palmitates, phenyl-acetates (traces). Acetates of various other alcohols are present. Nitrogen compounds include indole and phenyl-acetomitrile. Also present are decyclic aldehydes and a ketone analagous to jasmone.

Bather notes that the odor of the neroli oil is typical, being pungent, tenacious, and different from that of the orange blossom itself, which it nevertheless resembles.

Concentrating Fruit Flavors

In a study of the chemical constituents of volatile fruit flavors, report K. P. Dimick and M. J. Simone (*Ind. & Eng. Chem.* 44:2487, 1952) it was necessary to concentrate by distillation very dilute aqueous flavor solutions. A continuous-feed type of still, rather than a batch still, seemed appropriate for this purpose to facilitate handling of large volumes of solutions, and to minimize any chemical changes resulting from prolonged heating. An Oldershaw-type, 40-plate column was selected. Because the conventional design is not suitable for aqueous systems, the hole size and spacing of the bubble plates were increased to permit such distillations.

TOP NOTES by Fritzsche



A THOUGHT for the Month:

"Four things come not back: The spoken word; the sped arrow; time past; the neglected opportunity."

—OMAR IBN AL-HALIF

FLOWER of the Month

November—Chrysanthemum

December—Narcissus or Holly

MAYBE YOU KNOW HIM . . .

TO HOSTS of customers and friends throughout New England—he managed our Boston office for many years—and in the area served by our Chicago branch which he now heads, he's intimately known as PETE. But in his home town of Circleville, Ohio, the name recorded there is MILLARD JAMES NILES. Maybe that's why he now prefers just plain Pete. More than 20 years of selling F. B. products has helped to make Pete Niles the confident and exceptional salesman that he is, and rare, indeed, is the customer's problem for which his experienced background cannot provide a helpful answer. Surely, a good man to have around when perfume or flavor is the point in question. His major interests include three lovely women—his wife and two daughters; fishing, good books, and since June, a grandson whose middle name is Pete!

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Good Scents

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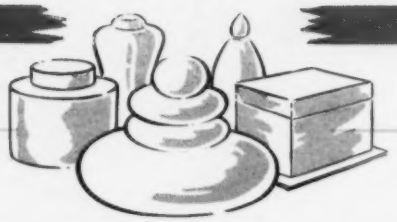

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FOR FOUNDATION CREAMS

Orange Blossom	$14.00 lb.
Fresh Rose	$11.00 lb.

FOR LANOLIN and HORMONE CREAMS

Orange Flower	$12.00 lb.
Glycine	$13.00 lb.

FOR HAND CREAMS and LOTIONS

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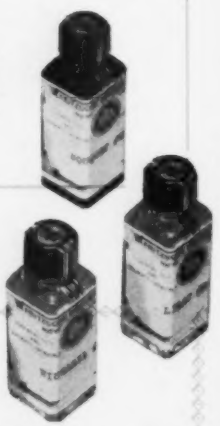

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- ☐ GLYCINE
- ☐ LILAC
- ☐ BOUQUET

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• MEMO •

To: PHARMACEUTICAL AND PROPRIETARY MANUFACTURERS

From: FRITZSCHE BROTHERS, Inc.

Subject: CHOOSING THE RIGHT PHARMACEUTICAL FLAVOR

Today, before marketing any new product, most drug houses give serious consideration to its palatability.....and thus, to its flavor. It has been our privilege, as flavor specialists for more than 80 years, to work closely with many of these firms and in every case their final choice of flavor has involved all or most of the following considerations:

COMPATIBILITY - There must be harmony between the pharmaceutical ingredients and the flavor chosen to disguise the taste.

PALATABILITY - Since this is the end result desired, the more complete its achievement, the greater will be the product's acceptance by those with sensitive or finicky tastes.

SUITABILITY - This is where the expert's fine sense of discrimination plays an important part in providing the appropriate flavor for the particular product.

STABILITY - Avoidance of materials susceptible to change requires intimate, technical knowledge of all ingredients used in flavoring.

UNIFORMITY - Producers of reputable products cannot afford to employ flavorings that fail to maintain a high measure of uniformity.

QUALITY - This should be the basic characteristic of every pharmaceutical component - including flavor.

PRICE - So little flavor is needed to provide the palatability desired that price should be a consideration only to the extent that it produces the best available flavor for the purpose.

Please remember, when faced with any problem involving flavor, that our laboratory facilities and experience are available for the asking. Remember, too, that in handling such problems, our firm policy is one of strictest confidence.

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A study of the operating characteristics of the modified column revealed that an 0.005 per cent phenol solution (used as a model system) could be concentrated 15- to 30-fold with a recovery of about 85 per cent. A solution of strawberry flavor was concentrated, without detectable flavor damage, about 20-fold, with a recovery of about 97 per cent of the essence (as determined by carbon analysis). From these observations, Dimick and Simone conclude that the modified Oldershaw column may be successfully used for aqueous systems and should be useful for concentration of volatile fruit flavors, provided no flavor alteration occurs during the distillation.

Adulteration of Lemongrass Oil

The effect of various adulterants on the physical characteristics of Trovancore lemongrass oil has been studied by K. N. S. Nair and N. S. Varier (*Indian Soap J.* 17:229, 1952). They found that adulteration with vegetable oils, methanol, kerosene, and an oil obtained from a white variety of grass grown in South Trovancore, can be detected easily by observing the changes in physical characteristics and in solubility in 70 per cent ethanol. Vegetable oils can also be detected by saponification and by liberating fatty acids with acid. methanol and ethanol can be extracted with water and identified. Paraffins can be detected by treatment with concentrated sulfuric acid.

Essential Oils of Zieria Smithii

In discussing the essential oils of *Zieria smithii*, F. R. Morrison, A. R. Renfold and J. Simonsen (*Proc. Roy. Soc. N. S. Wales* 84:196, 1950) stated that the oils were prepared by steam-distilling the leaves and terminal branchlets from this small Rutaceous shrub. Minimum and maximum characteristics of 19 samples obtained over the period of years from 1923 to 1949 were as follows:

Yield of oil	0.13-1.6%
Specific gravity	0.9857-1.0407
Index of refraction	1.4850-1.5273
Specific rotation	—29.8-+94°
Ester value	5.5-158.3
Ester value after saponification	36.1-172.0
Solubility in 70% alcohol	0.7-10.0 vol.

The oils from Queensland, New South Wales, and Victoria consist principally of one or more of the phenol ethers, safrole, methyleugenol, and elemicin. The oils obtained from plants growing in New South Wales also contain *d*-α-pinene, *l*-Δ^3-carene-5,6-epoxide, linalool, unidentified alcohol ($C_{10}H_{14}O$), and nopinone. The identity of this ketone requires confirmation since it has not been found previously to occur in nature.

Leaf Alcohols

One of the series of non-technical articles on essential oils, appearing in the *Perfumery* and *Essential Oil Record* (43:242, 1952), is devoted to the alcohols. Particular consideration is given in this discussion to the comparatively new materials known as leaf alcohol and violet leaf alcohol. Leaf alcohol is an unsaturated alcohol of formula $C_6H_{12}O$ and is an hexene-ol. It is found in the free state in many leaf oils and in the combined state in the last runnings of Arvensis types peppermint oils as an ester. It has been prepared synthetically and is of interest also for its relation to jasmone.

On oxidation it gives "leaf aldehyde." Violet leaf alcohol is a nonadiene-ol of the formula $C_9H_{16}O$. It is a primary alcohol and gives on oxidation the aldehyde "violet leaf aldehyde." These bodies have been found in violet leaf oil and have also been prepared synthetically. They play an important role in imparting the green leaf note to perfumes.

Attention is called to the interesting fact that although chemists have been able to prepare several bodies with the identical chemical formula it has been proved that to get the exact reproduction of the odor of the natural body the atoms must have exactly the same relative configuration in space as the natural body.

Menthofuran in a Peppermint Oil

In a report on the basil-like leaf formation in the peppermint and the high menthofuran content of its oil, L. Benezet and G. Igolen (*Bull. soc. chim. France*, 1951, p. 912 through *Chem. Abstr.* 46: 5265, 1952) state that the essential oil of European peppermint parasitized by a mite of the genus *Eriophyes* may show a positive specific rotation unlike normal oil. By fractional distillation a series of dextrorotatory fractions were obtained and those with a specific rotation greater than +27.5° were combined. The mixture was heated to 80° C. in the presence of 0.2 parts of maleic anhydride for 24 hours and then cooled. The crystals obtained were refluxed for 36 hours with 0.7 parts of α-phellandrene in benzene medium. From the benzene-free sirup menthofuran was separated. It has the following characteristics.

Specific gravity	0.980
Specific rotation	+81°
Index of refraction	1.4878
Boiling point	72° C.

An abnormally large amount of this menthofuran is present in the oil from parasitized plants.

Oil of Cyperiol

According to G. N. Gupta and G. Chandra (*Current Sci.* 20:273, 1951), *Cyperus scariosus* is a treelike plant that produces tubers which on steam distillation yields an essential oil. Analyses of this oil of cyperiol gave the following properties:

Specific gravity	0.9898
Index of refraction	1.5130
Optical rotation	—9.14°
Acid value	5.36
Saponification number	14.87
Aldehyde content	2.5%
Acetyl number	108.0

In the opinion of Gupta and Chandra, this oil could partly replace patchouli oil.

Absolute and Concrete of Garland Flower

According to Y.-R. Naves and P. Ardizio (*Perf. & Essent. Oil Rec.* 43:231, 1952) very little is known yet regarding the analysis and composition of the concrete and absolute of garland flower or butterfly lily (*Hedychium flavum* Roxb.) one of the zingiberaceae grown in Madagascar and Comoro Islands. Examination of a concrete, extracted in 1951 in Madagascar by means of petroleum ether, revealed a dark maroon-brown wax, with strong floral and spicy odor, somewhat resembling concrete of Roman Cassie of rather poor quality.

The characteristics of the distillates obtained by steam distillation under reduced pressure were:

	Concrete	Absolute
Specific gravity	0.9525	0.9542
Index of refraction	1.4936	1.4952
Specific rotation	—9.60°	—9.64°
Acetyl number	8.3	9.2
Ester number	54.6	58.8

The investigators extracted the aldehydes and ketones from 30 Gm. of concrete essential oil by means of Girard and Sandulesco's T reagent, and isolated 0.15 Gm. of a product with an acetophenone and cumin-aldehyde-like odor, but without the violet note of ionones or irones.

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Abreast Of The Markets

Botanicals Very Quiet; Chemicals and Essential Oils Very Active; Tartaric Acid Lower; Glycerine Higher

There were a number of important occurrences in the markets during November in both the chemical and essential oil fields, while the botanicals were extremely quiet and uneventful.

The Cuban Sugar Institute finally bowed to the pressure which has been exerted by fermentation alcohol producers and reduced the price of molasses to the new low of 4½ cents a gallon. This has enabled the alcohol producers to enter the market again on a firm footing, and they are now in a better position to compete with the synthetic alcohol producers pricewise.

Following this incident the price of ethyl alcohol was also reduced to 43 cents a gallon for the denatured No. 1 special.

Reflecting a tightening of the glycerine market, this commodity was advanced by 5 cents a pound. Quicksilver also exhibited a rise by going up to $205 a flask in the face of reduced imports from Spain.

On the essential-oil side of the market, orange oil continued to show decided downward trend, while grapefruit and lemon oils were entering very firm markets. Cassia and anise oils, both originating from areas behind the Iron Curtain, were becoming increasingly difficult, if not impossible, to procure. Anethol, a substitute for the former, was displaying more activity as the difficulty mounted. The low levels of both the citronella and lemongrass oils were promoting similar price reductions among their derivatives.

More reports were received indicating that vanilla beans had begun an upward trend which may last for many months, or a year or more, depending on the circumstances. Some estimates showed that the new crops of beans from Mexico is expected to be considerably smaller than last year's. In addition, there does not seem to be a large enough supply available from France to handle the expected demand in the year to come. At the present time, the signs are pointing to a period of scarcity.

[1]Prices quoted in this section were current on the first of this month.

Tartaric Acid Lower

Both cream of tartar and tartaric acid were reduced 2½ cents during the middle of November as a result of the importation of low-priced material into the United States. The acid is now being quoted at 37½ cents for quantities ranging from 10,000 pounds to a carlot, and for 38 cents a pound for less than 10,000 pounds. For 100-pound drums the price is 39 cents a pound.

Cream of tartar is now being quoted at 32 cents for carlot quantities, and 32½ cents for shipments ranging from 5,000 pounds to a carlot. In quantities less than 5,000 pounds the price is 33 cents, and for 100-pound drums, it is 34 cents.

Glycerine Up 5c a Pound

Refined glycerine is now selling at 39½ cents a pound. At the same time, spokesmen indicate that stocks of glycerine are very much on the tight side. This was the first time since the early part of this year that there had been any change in the glycerine price. In March, 1952, it was reduced 6 cents, to the level where it remained until last month.

Refined glycerine demand has been greater than normal in recent months, and consumption of glycerine is usually higher at this time of year anyhow, which means an extra amount has probably been used up in the last few months.

Isopropyl Alcohol Down

Isopropyl alcohol was reduced by 3 cents last month, and is now selling for 35½ cents for the 91 per cent grade, 37¾ for the 95, and 40 cents a gallon for the 99 per cent grade in tankcar quantities.

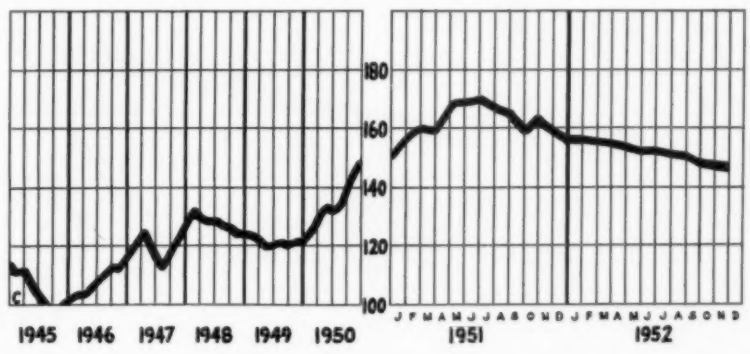
Orange Oil Down Some More

Orange oil continued its price decline last month, reaching $1.20 for the cold pressed variety. This was the first time since September, 1950, that the price of the oil had been so low. From all indications at the present time, it seems that the price may drop a lot more before the end is in sight. Orange oil is being produced so plentifully in Florida by the frozen-juice manufacturers as a by-product, that its growing supply is forcing the price down from the $2 price which had been in effect up to September of this year.

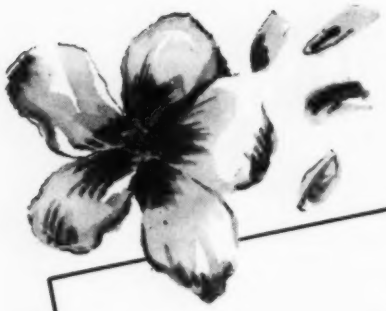
Parallel circumstances occurred in 1950 when, in May the price plummeted to 80 cents a pound and continued to fall the following month to the year's low of 49 cents. By July, 1950, the oil

(*Continued on page 823*)

25 Cosmetic Raw Materials—Unweighted Price Index. 1926 = 100.



The cosmetic raw materials index dipped slightly from 147.5 to 147.2 Alcohol and balsam Peru were lower; glycerine was higher.



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The price of quicksilver advanced to $205 a flask last month, with the upper end of the range reaching as high as $209. Not only has there been little material available on spot for quite a while, but shipments which are now at sea are almost all sold before they reach port. Spokesmen explain that the reason Spain upped the price of the metal is that most of the material is sold out ahead of time, through the balance of this year.

Alcohol Reduced

Alcohol, affected by the recent price reduction of blackstrap molasses, was itself reduced last month. The denatured No. 1 special ethyl alcohol is now established at 43 cents a gallon. This is the first change since May, 1952, when the tank car price of tax-free ethyl alcohol was reduced from 75 cents to 55 cents a gallon.

Molasses Down to 4½ Cents

Last month the Cuban Sugar Institute completed the sale of its remaining 1952 blackstrap molasses stocks by selling some to the cattle industry as feed for 7 cents a gallon, and the remainder to alcohol fermentation plants for about 4½ cents a gallon.

Having been forced down to this low price-level by the refusal of American producers to buy higher-priced material, the Institute held off as long as it could before cutting the price. This latest development was a decided boon to fermentation producers as it brought the price of the molasses well within their means as a source of the fermentation alcohol and once again put them in a firm position with respect to the competition offered by the synthetic alcohol producers.

Camphor at 50c a Pound

Natural powdered camphor is continuing at the low price of 50 cents a pound, with a few reports stating that there have been prices below that figure.

Vanilla Beans Higher

Vanilla beans continued their advancing price trend for the second month in November because there were so few offerings from France, added to the increased interest in the market on the buying end in this country. Carryover stocks seem to have all but disappeared by this time, and dealers are looking toward new-crop material.

According to some authorities in the field, the new crop of Mexican beans will amount to about 175,000 beans, as against a supply of 275,000 pounds last year. Reviewing the market in general, it appears that the demand this coming year will outstrip the available supply, and it looks as if the price will inch up slowly.

Bourbon beans last month were selling from $4 to $4.25 a pound, the Mexican cuts, from $3.75 to $4 a pound, and the Mexican whole, from $4.35 to $4.85 a pound.

Carnauba Wax Getting Firmer

Carnauba wax is showing signs of advancing in price on spot, mostly because there have been no recent offerings from Brazil. Dealers in New York are finding it difficult to obtain replacements at the present time. At the same time, there has been an increase in the demand among the consumers.

Podophyllin Reduced

In some quarters podophyllin is now selling for $11.20, while other sources are quoting it at $11.50 a pound.

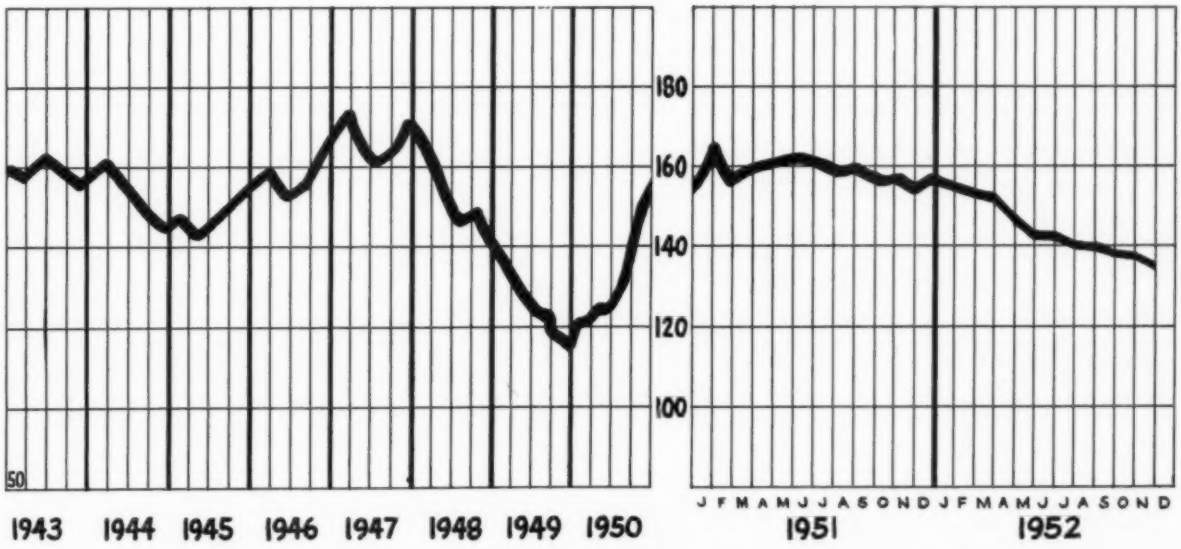
Ergot Situation Improving

Up to the present time ergot has been selling at $4.50 a pound, but there are indications that the price may be reduced to meet the competition of lower-priced imports.

Agar Stocks Low

There is very little agar available at the present time from Japan, a situation which ordinarily would be extremely

50 Raw Materials—Weighted Price Index. 1926 = 100.



The price index of fifty commodities for November went down from 137.5 to 134.1

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November Price Changes

UP

Cassia Oil, Redist. 50c
Glycerine 5c
Grapefruit oil 50c
Mercy $18
Vanilla Beans, Bourbon 50c
Mex. Cuts 25c
Mex. Whole 35c

DOWN

Alcohol, Denatured No. 1 Spec. 14½c
Balsam Peru 10c
Bois de Rose 25c
Cardamom Oil $1
Cream of Tartar 2½c
Eucalyptus Oil 10c
Ginger Oil 50c
Isopropyl Alcohol 3c
Lime Oil, Distilled 50c
Orange Oil, Amer., Cold Pressed 20c
Peppermint Oil, Natural 25c
Redistilled 25c
Pine Needle Oil 45c
Rue Oil 25c
Sage Oil, Dalmatian 25c
Tartaric Acid 2½c
Vetivert Oil, Reunion $1
Wormseed Oil, 50c
Wormwood Oil, 25c

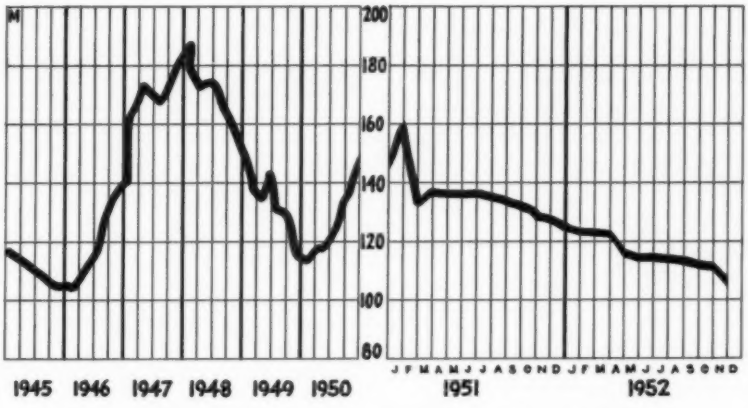
noticeable. However, the market has not felt the tightening position at the origin because demand for the item last month continued on the light side, tending to alleviate the somewhat critical supply problem. Those dealers who were selling agar last month were doing so in limited quantities only. Some reported the agar No. 1 Kobe at $2.25, while others indicated it extended from $2.50 up to $2.75. In either case, it was very largely nominal.

Orange Oil Down

(Continued from page 819)

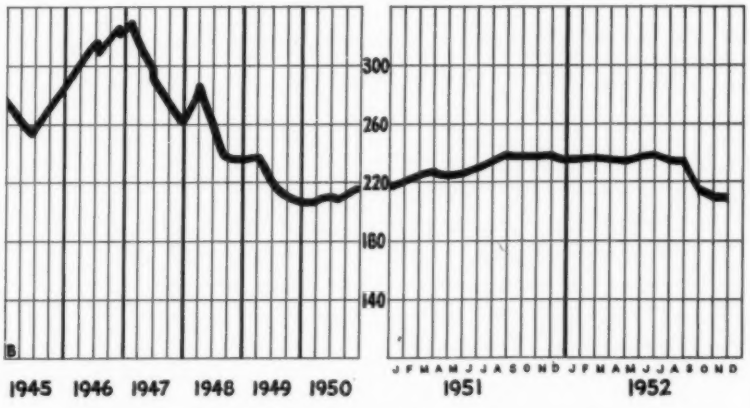
climbed to 55 cents, in August, to 90 cents, September, to $1.25, and to $1.45 in November. The price later went up to $2, where it has been maintained until this current reduction.

15 Medicinal Chemicals—Weighted Price Index. 1926 = 100.



The medicinal chemicals index dropped off from 111.8 to 104.3. Alcohol and cream of tartar were lower; mercury was higher.

15 Botanicals—Weighted Price Index. 1926 = 100.



The botanicals index remained at 208.1. There were no changes.

Ipecac Root Is Tighter

Importers of ipecac root report that, although they have received quite a number of inquiries, they have been unable to fill them immediately. Producers at the origin have made very few offers lately and have, in some cases, even ignored the inquiries, suggesting they are not interested in doing business at the current price levels.

Eugenol Vanillin Lower

The price of eugenol vanillin declined 25 cents during the last week in November and was quoted at $6.50 a pound. There were sufficient quantities of the material available, and the production was being maintained at a rate consistent with the demand for that particular type of vanillin. Guaiacol and lignin vanillin both remained at $3 a pound.

Gum Arabic on Quiet Side

There has been very little activity in gum Arabic in recent weeks. According to sources in the trade, item will not pick up until January or February.

Cod Liver Oil Is Steady

There has been no change in the status of cod liver oil which is still being quoted from $1.55 to $1.65 a gallon. Spokesmen state the demand is on the active side, with supplies more than enough to meet all needs.

No Change in Clove Oil

Clove bud oil remained at the high level which has persisted for many months because of the extreme cost of the clove buds. The price of the oil ranged from $8.50 up to the nominal figure of $11 a pound. Several important dealers have ceased to quote the oil, although there are a few who have been able to make their limited stocks last by selling it in small quantities to regular customers only.

Bois de Rose Oil Down

Bois de rose oil fell off by 25c in November to $4.25 a pound as a result of a favorable supply picture in Brazil.

Grapefruit Oil 50c Higher

Grapefruit oil went up to $3 from its $2.50 level in November as a result of a reduced supply and increased buying. Contrary to the orange industry, there is not as much frozen juice produced and consumed, and a large

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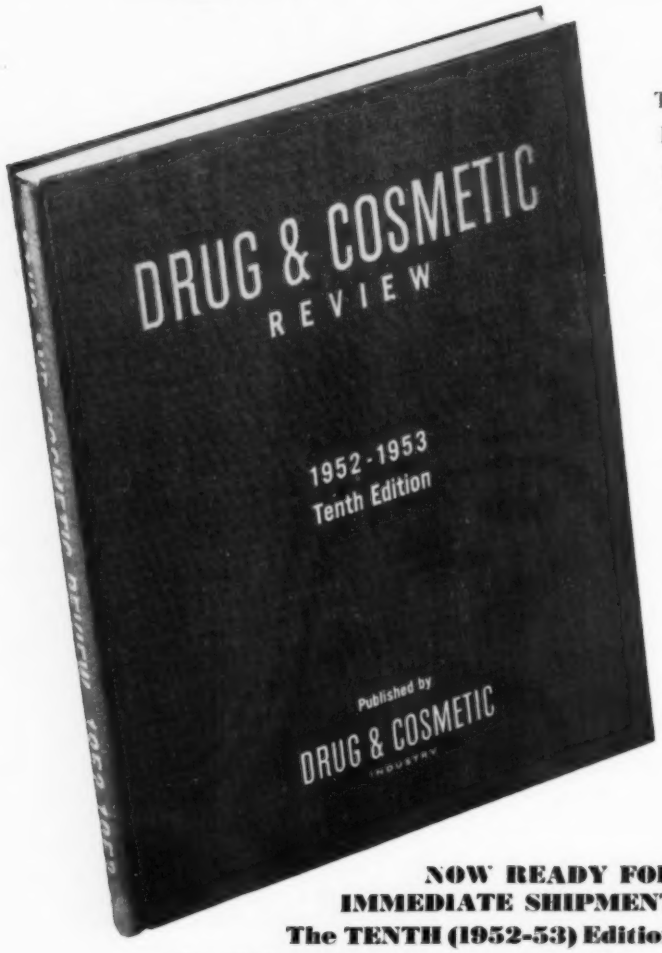

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amount of the fruit is eaten as such, thus removing the essential-oil source from the industry. This oil is expected to move higher in the months ahead, according to various sources in the industry.

Peppermint Oil Down a Little

This oil has been jumping around quite a bit pricewise in the last month or two and has now shown a slight decline for both types. The natural oil is being quoted from $6.50 to $6.75, and the redistilled, from $6.75 to $7.50. Peppermint Oil has not settled down sufficiently yet to obtain a long-range view on it.

Bergamot Oil Feeling Pinch

With very little bergamot oil arriving in this country from Italy, and with the demand fairly active, there was considerable firmness last month. Dealers expect this oil to ease up during the early part of next year, after the new crop becomes available.

Cassia Oil Higher

Indicating a firmer trend, owing to extreme difficulties in replacement, cassia oil last month showed another in a series of recent advances. It is now being quoted from $5.50 to $6.50.

Anise Oil Just About Gone

Additional essential-oil dealers took anise oil off their lists last month, as stocks continued to drain. What few sources are still selling the oil, do so in very limited quantities. Replacements will not be available in appreciable amounts until the Far Eastern situation clears up. More and more consumers are turning to the substitute product, anethol, and appear to be suffering little damage by the anise-oil scarcity. The price continued to be quoted from $2.20 to $2.70, when the material was available.

Citronella Derivatives Down

Because of the low price of citronella oil, several of the aromatic chemicals derived from that oil have also been reduced further during the past month or two. Geranyl acetate is down to about $1.35 a pound, extending up to $1.80. There is more than enough material on hand at the present time to satisfy all needs. Geraniol was reduced to 60 cents a pound for the lesser grades, and to $1.40 a pound for the finer-quality material. Citronellol, likewise, was lowered, this now selling between $1.75 and $2.45 a pound.

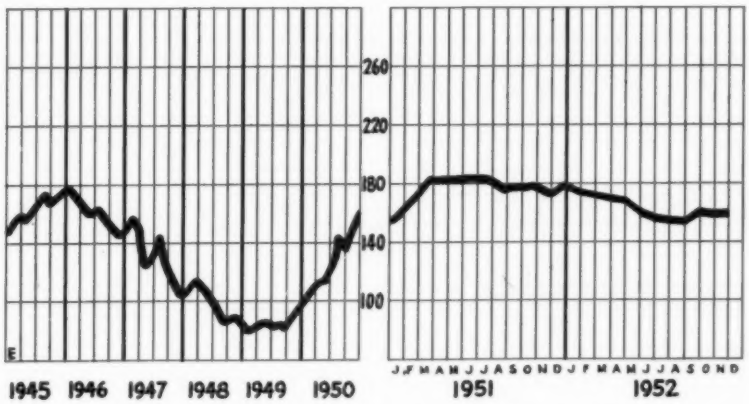
Geranium Oil Continues Firm

Although there are some reports of lowered price levels in the trade, many of the dealers are quoting between $13.75 and $15 a pound for both the African and Bourbon geranium oil. It appeared that a definite firmness would prevail for the next few months because of the difficulty in obtaining replacements at the present time.

Lemongrass Oil Leveling Off

Some sources state that the low-priced lemongrass oil is just about all used up and consequently the price will start climbing from now on—or at least stay where it is. The price range last month continued to extend from $1.20 to $1.65.

15 Essential Oils—Weighted Price Index. 1926 = 100



The essential oils index advanced slightly from 161.0 to 161.6. Bois de rose, eucalyptus and peppermint oils were lower; cassia oil was higher.

Citral Down Too

Directly affected by the low cost of lemongrass oil along with the abundance of material on spot, the citral price has taken a tumble in recent weeks. By the first part of December it was being quoted between $3.20 and $3.75 a pound. In this commodity, too, it was evident that there was more than enough material on hand to take care of all demands.

Citronella Oil May Go Up

Low-priced citronella oil is continuing to enter the United States from Formosa. Late reports indicate, however, the price has been low for so long that planters at the origin have apparently reduced their crops. The result is only showing up now, in reduced yields. Coupled with this fact is the always increasing cost of producing of the oil.

As a result of these observations, some spokesmen believe the price will eventually start swinging upward, reflecting the tightening conditions on the island of Formosa.

Spearmint Oil Showing Strength

Recent signs have been pointing to a higher price of spearmint oil from the Midwestern area. This has resulted from the increased consumption of the oil which has been taking place over the past year. At the present time the available stocks have been reduced to a low point but will be relieved shortly by the new-crop material which is about ready.

Lemon Oil in Firm Position

Lemon oil continued to show considerable firmness last month and remained at its former price levels of $5.75 to $6 for the California oil, and $5.65 to $9.50 for the Italian type.

Wormwood Oil Down 25 Cents

The price of wormwood oil declined last month to $6.25, a drop of 25 cents. Since new-crop material is almost at hand, there has been little activity in this item.

Anethol More Active

As a direct result of the very scarce position of anise oil, this aromatic chemical has been the center of considerable interest in recent months. The material is being produced in sufficient quantities to satisfy all demands. Anethol was quoted last month in the neighborhood of $1.20 and $1.65.

Cosmetic Developments and Markets

(*Continued from page 751*)

disagreeable odor. Deodorants based upon antiseptic action are in the forms of creams, lotions, colognes and sticks. Within the past two years the stick deodorant has shown the greatest growth, and again this may be due to its ease of application and that it may be carried in milady's purse.

I would like to present my viewpoints regarding the use of antiseptics in cosmetics and soaps.

I have always looked at cosmetics as a means to good grooming, and I think you'll agree that a well-groomed animal whether man or a horse is more pleasant than an ungroomed one. One of the fundamentals of good grooming is cleanliness, and if in addition to removing obvious or invisible dirt, you can remove bacteria which cause disagreeable skin blemishes or prevent decomposition of perspiration, then I think they belong in cosmetics and soaps.

Ten years ago you could not interest cosmetic manufacturers in antiseptic chemicals, as they said we sold glamour and were not interested in medicinal claims for our products; furthermore, we could not infer to our customers their skin was harboring undesirable bacteria. It's only unfortunate that bacteria are small and not visible to the naked eye, for if that were the case each and everyone of us would be anxious to remove them. I am glad to report that this condition has changed, and today manufacturers are adding antiseptic agents to face creams, hand lotions, soaps, deodorants, baby products, talcum powders, hair preparations and many others. Some prefer to make specific claims for their products, others prefer to add an antiseptic for its additional benefit and believe their customers will realize the extra quality of their product through the results obtained.

On the subject of soaps, I would like to touch on the introduction of soaps made from synthetic detergents or mixtures of soap and synthetics such as originally developed by the Army. There have been numerous manufacturing problems, but these are being overcome. These soaps will be particularly demanded by consumers in hard water areas.

The subject of synthetic detergents leads us to other cosmetic items. Their introduction in tooth pastes during the Thirties was an advancement in dentifrice formulation. More spectacular though was their adoption in the so-called cream shampoos which today are enjoying the major sale. Their superior cleansing properties and lack of formation of scum are undoubtedly the reason for their success.

One of the major factors in increased cosmetic sales is the home permanent wave. It is based upon thioglycolate compounds and these compounds reduce to a half hour or so the reaction time on hair which previously required three to four hours. Thioglycolates have a strong reducing action and therefore an oxidizing agent was required to arrest this action. Today some wave solutions are offered which require no neutralizer.

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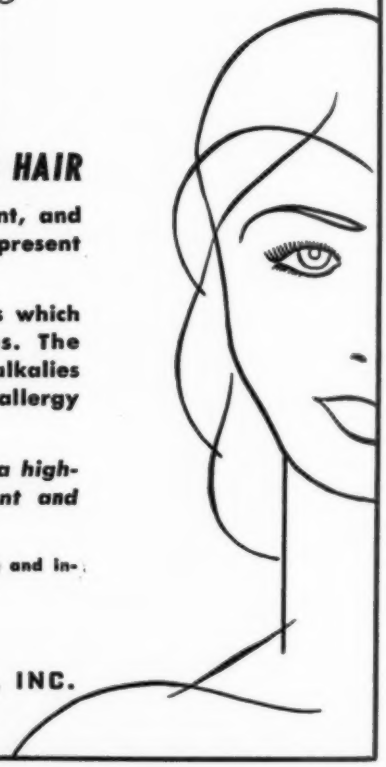

At the present time this is a highly controversial subject and I'm not well enough versed on the subject to offer any opinion as to the merits of any of the arguments presented.

It would be difficult to single out any one or two striking developments in the formulation of perfumes, toilet waters and colognes. Though chemistry is a very important part of perfumery, the developing of an odor still falls within the realm of art. The perfumer has been successful in creating odors acceptable to the American woman, and her tastes differ greatly from those of the European woman.

The American woman is gradually learning the importance of fragrance in her everyday living and in the selection and use of perfume for each type of occasion. The social emancipation of women, the freer femininity of youth demand more provocative scents than were used by their grandmothers. The floral bouquets, especially in colognes and toilet waters are favorites in the American market, though it is not possible to obtain the tenacity from these that you can from a perfume extract.

Again, we see the desirability of the special packaging which allows easy application and portability in the solid cologne sticks which have grown in popularity in the last few years.

There are, of course, many other innovations in cosmetics including sun-tan oils and lotions, new nail lacquers, creams with vitamins, emulsified hair oils, hand cream sticks. It would be impossible to cover them all, and therefore with your permission I would like to proceed to the subject of future new markets for cosmetics.

Obviously, any major business recession or depression will have an effect on cosmetic markets as well as all other products. However, though we may have such a slump, I think we might alter Will Roger's famous saying during the Thirties to, "The American people will not only drive to the poorhouse, but they will also be taking their cosmetics with them." In spite of the scarcity of materials during World War II, the allocating agencies soon realized that cosmetics were not a luxury, but a necessity to maintaining morale. Therefore, it is my opinion that cosmetic usage and sale will continue to grow under average business conditions This opinion is based on the following reasons:

1. Urban populations are still increasing and past records indicate per capita usage of cosmetics is higher in urban areas.
2. Teen-ager's cosmetic usage is still increasing.
3. Men's cosmetic usage continues to increase.
4. There is more movement of people in their daily lives and people who are in frequent contact with others are the ones who use cosmetics.
5. The continuing high birth-rate will continue the high rate of sale of baby toiletries.
6. The increased participation of women in sports will be reflected in greater cosmetic use to care for skin exposed to years of boating, golfing, swimming and sunning.

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7. Improved products will add to the market those consumers who will not use certain cosmetics such as antiperspirants, hair dyes, depilatories, because they believe them to be harmful.

8. The trend to selling cosmetics in super-markets will encourage the buying of cosmetics by families instead of women alone.

9. Improved packaging making it possible to carry cosmetics and to have them available at the office, dancehall, theatre will encourage increased usage.

10. The cosmetic chemist will continue to develop new and better products for special conditions.

What can we expect in new products? There are many which would have a tremendous sale. A few which come to mind are:

A simple applied sure-cure for dandruff

A product to prevent the loss of hair

A product to prevent the brittleness of nails

A more durable lipstick

A more durable nail polish

A product which would actually whiten the teeth or perhaps even a suitable white coating

Better and easier to handle hair dyes

In closing, I want to touch on the problem of the large increase in our population of older persons. Due to our scientific progress and better living, the number of older people is gaining faster than any other group with the exception of the very young. Cosmetic manufacturers must take cognizance of this fact as well as other manufacturers. Some companies have introduced products especially for older women, and the estrogen products fit in this category. But there are many dermatological problems of aging men and women. Some of these have been enumerated in journals on geriatrics, but primarily from a treatment of conditions which have reached an advanced or serious stage. I would like to suggest to the cosmetic manufacturers that they approach this problem from a preventive viewpoint rather than a curative or treatment one. This is not a short-range program and requires a good deal of educational effort as well as well-organized research.

Sclerosing Solutions

(Continued from page 753)

in selected hernia cases, but that the method is hazardous.[20,35]

Sclerotherapy has also been employed for a long time in the treatment of hydroceles and spermatoceles but there is still no general agreement regarding its value. Recently, however, there has been renewed interest in the use of injection therapy in these disorders and a fairly high percentage of satisfactory results have been reported[36,37] with the use of this method.

Standards for the "ideal" sclerosing solution have been proposed by several workers.[38] For example, it is said[39] that a desirable solution for the injection treatment of varicose veins is one which is nontoxic, not too viscous, not too caustic for the wall of the vessel and not productive of drug allergy. Speaking of sclerosing

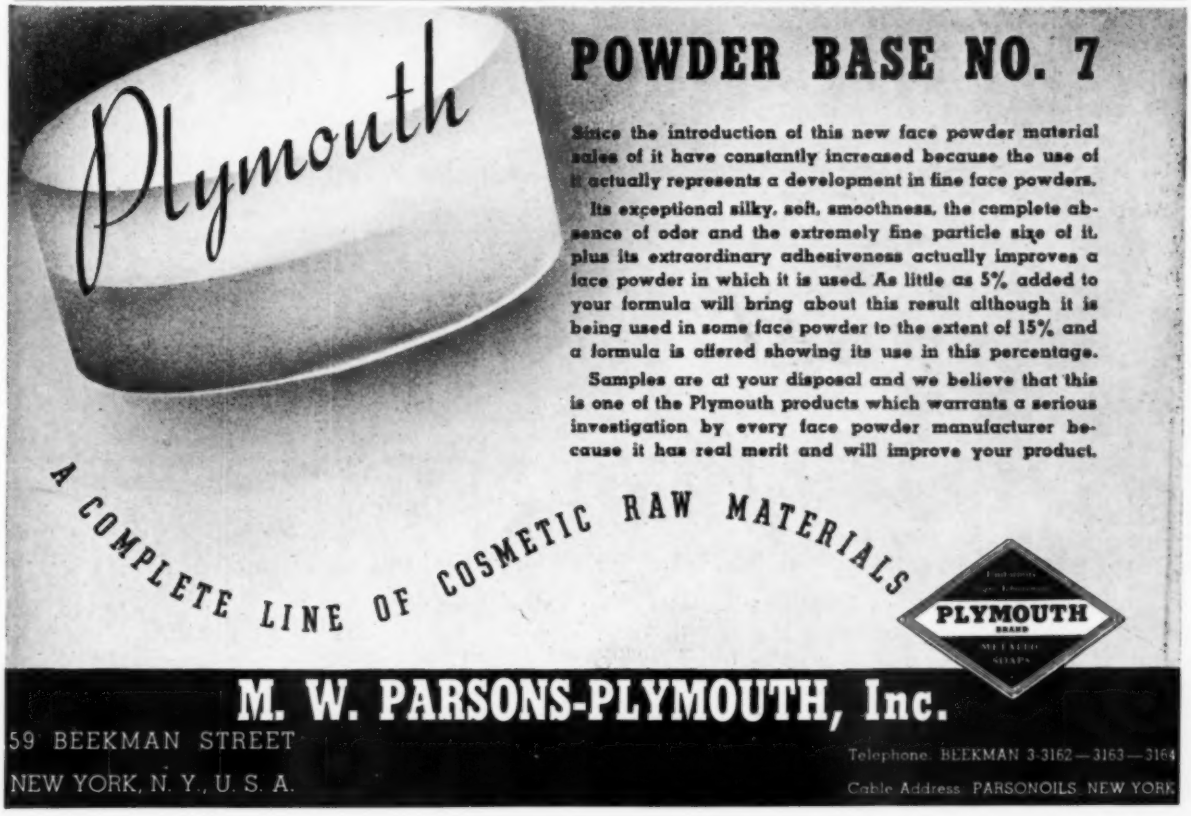
solutions in general and going into somewhat more detail, Drueck[28] states that the ideal sclerosing solution must: (a) have a low toxicity, (b) produce perfect sclerosis, (c) be painless, (d) possess bactericidal properties, (e) not produce any slough, and (f) not produce allergic phenomena.

The problem of allergic reactions that sometimes occur with the use of sclerosing solutions is one that has long troubled advocates of injection therapy.[40-41] To avoid such reactions, Lyall[8] advises that patients exhibiting other allergies, such as hay fever, asthma and hives, should always be suspected and have sensitivity tests made on them. As remarked by Hirshman,[15] small doses of any of the standard solutions may be used to determine the patient's sensitivity at the beginning of treatment. He points out, however, that there is no way of determining which patients may become sensitive during the course of treatment. At the first appearance of undesired effects, treatment should be discontinued, or the solution in use should be replaced by another one.

In considering the problem of allergy, Biegeleisen[42] states that in cases where sensitivity is suspected or present, recourse may be had to nonallergic solutions. These include dextrose, invert sugar, sodium chloride, and dextrose and sodium chloride. He feels that these solutions may be used safely even in allergic individuals.

Over the years, many materials have been used as sclerosants and many of them have been discarded for one reason or another.[9-43] Nonetheless, a fairly large number of sclerosing solutions are currently in use to provide the physician with a wide choice of the most suitable preparations. These may be divided into three main groups. The first of these categories consists of hypertonic solutions made with sugars or sodium chloride. For want of a better term, the second group may be described as the chemical sclerosants. It comprises solutions based on quinine and urea, quinine and urethane, phenol, and salicylates. The third, and perhaps the most important group, comprises the soaps and surface-active agents. This group includes sodium tetradecyl sulfate and the salts of various fatty acids, such as potassium oleate, sodium ricinoleate, sodium morrhuate, sodium psylliate, ethylamine oleate and monoethanolamine oleate. In some cases, the sclerosing agent is combined with a local anesthetic, but some of them possess an anesthetic action of their own.[30]

Hypertonic dextrose solutions, containing 30 to 50 per cent of the sugar, are sometimes employed in the injection treatment of varicose veins.[4] However, it has been reported[21] that the clots formed by dextrose have a tendency to break up. The action of invert sugar is similar to that of dextrose and solutions ranging in concentration from 50 to 75 per cent have been used in the sclerotherapy of varicose veins.[44] In considering the effects of these sugars, some authorities[11] feel that although they do not cause systemic reactions, there is a certain amount of pain, as well as some sloughing, when they are injected. In addition, their sclerosing action is not uniform.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In Hirschman's[15] opinion, a 20 per cent solution of sodium chloride is a very effective sclerosing agent for varicose veins, with very little reaction except for immediate cramping pains. It is for this reason that an anesthetic is sometimes included in such preparations.[21] According to a British source,[45] 30 per cent saline is probably the safest substance to use for varicose vein injections, but it is extremely painful when injected in sufficient quantities to produce good thrombosis, and general anesthesia is usually necessary.

Solutions containing 50 per cent of dextrose with 30 per cent of sodium chloride have been employed as varicose vein sclerosing agents. However, Wright[46] has reported that such solutions have gone out of favor and are used only occasionally in allergic patients.

Probably the most important of the so-called chemical type of sclerosants are the quinine and urea solutions. These are used not only for the injection therapy of varicose veins but are also extensively employed for the treatment of hemorrhoids. Although stronger solutions of the double salt of quinine and urea hydrochloride are sometimes injected for varicose veins,[11] the five per cent solution is generally recommended[4,25,30,32] for hemorrhoids. Popular since its introduction in 1913,[24] this solution is considered by some authorities[6,47] to be the best and safest for hemorrhoidal sclerotherapy.

Solutions of quinine hydrochloride and urethane find frequent use in the treatment of varicose veins, and a U.S.P. solution is available for this purpose. In Payne's[12] opinion quinine-urethane is one of the most certain of the sclerosing agents for the injection treatment of varicose veins. The disadvantage of this mixture is that a patient may be sensitive to quinine and show the often severe symptoms of cinchonism.[11,15,21]

Solutions of this type are also administered in the injection treatment of hydroceles and spermatoceles. Mayers,[36] for example, employs a solution containing 13.33 per cent of quinine hydrochloride and 6.66 per cent of urethane. If a second injection is needed, only the quinine solution is needed. Payne,[37] in England, has been using the following solution since 1948 for treating these disorders:

Quinine hydrochloride	**4.0 Gm.**
Urethane	**2.0 Gm.**
Distilled water, to make	**30.0 cc.**

Phenol-based sclerosing solutions are now seldom used in the treatment of varicose veins,[21] but they find wide employment in the therapy of hemorrhoids. According to Pruitt[24] the oldest and most commonly used sclerosing agent for piles is carbolic acid in strengths of from five to 10 per cent in glycerine and water, almond oil or other vegetable oil. He warns that non-absorbable oil or mineral oil should not be used because it remains in the tissue as a foreign body or an oil tumor.

Five per cent of phenol in vegetable oil, usually almond oil, is commonly employed, but solutions containing up to 10 per cent of phenol are also used. According to Pfeifer,[48] injection therapy using five per cent of phenol in oil will cure a fairly large proportion

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of patients with simple, first degree hemorrhoids. Some proctologists[29,49] show a preference for the phenol in oil solutions and the results obtained with these preparations are sometimes better than those gotten with quinine and urea.[47]

Solutions of phenol in glycerine also rate high for the injection treatment of hemorrhoids. For example, both Pruitt[24] and Hodges[29] give the following as a satisfactory sclerosing solution:

Phenol, liquified	**1 part**
Glycerine	**3 parts**
Water	**4 parts**

In England, Dodd[15,50] reported superior results in varicose vein therapy with a sclerosing solution made from:

Phenol, crystals	**2.0 per cent**
Glycerine	**30.0 " "**
Glucose	**30.0 " "**
Water, pyrogen-free, to make	**100.0 " "**

Available in Britain as P2G Sclerosant, this combination is suggested, not only for the treatment of varicose veins, but also for varicose ulcers, varicose eczema, varicocele, hemorrhoids, and the injection of ganglia.[51]

Quite recently in discussing the value of the injection method for the treatment of inguinal hernia in infants and children, Biegeleisen,[33] cited the following as the best mixture for use with this technic:

Zinc sulfate	**4 parts**
Phenol, crystals	**24 "**
Glycerine	**16 "**
Water, to make	**100 "**

Sodium salicylate has been described[40] as a good and safe sclerosant for varicose veins. However, it does cause pain. Thus, despite the effectiveness of a 30 per cent sodium salicylate solution, Hirschman[15] discontinued its use because it produced "excruciating cramping pains" subsequent to the injections.

Other salicylates have been tried in order to overcome this disadvantage. According to one report,[52] a 25 per cent solution of lithium salicylate has given satisfactory results. A British preparation, called Lithocaine, which combines this salt with a local anesthetic, is said[53] to provide a safe and reliable sclerosant. According to Pratt,[21] a suitable formula for a preparation of this kind is as follows:

Procaine hydrochloride	**1.0 Gm.**
Lithium salicylate	**30.0 Gm.**
Chlorocresol	**0.2 Gm.**
Water, distilled, to make	**100.0 cc.**

This solution is sterilized at from 98 to 100° C. for 30 minutes.

The soaps and related materials form a modern and fairly large group of sclerosants. For example, potassium oleate, a familiar and fairly simple compound of this class, is well recommended[39] for the injection

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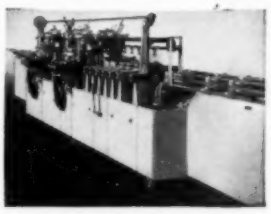

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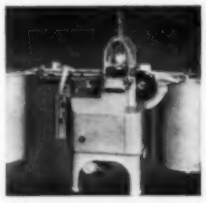

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therapy of varicose veins. De Takats and Fairbrother[54] employ a five per cent solution of potassium oleate in their technic for the management of varicose veins of the lower extremities.

Sodium ricinoleate (Sovicin) is also listed[39] as a useful agent for the injection treatment of varicose veins. Supplied as a two per cent solution, the soap may occasionally cause allergic reactions. Hence it is essential to begin treatment with a test dose.[20]

The problem of allergic reactions looms large with sodium morrhuate,[40] and the possibility of sensitization or idiosyncrasy to the compound must be kept in mind. One of the best known of the soap-type sclerosants, sodium morrhuate is prepared from a mixture of fatty acids of cod liver oil. The requirements of sclerosing solutions made with this material are proved in the official standards for sodium morrhuate injection, U.S.P. A five per cent solution is generally employed, and higher concentrations are not recommended.[20] A small proportion of a preservative, up to about 0.5 per cent, is generally present and many preparations contain from two to three per cent of benzyl alcohol, as a local anesthetic. Such solutions find frequent use in the treatment of varicose veins, but are also employed in the sclerotherapy of hemorrhoids.

A modified preparation that seems to be superior to sodium morrhuate alone, has been made with 10 per cent of sodium sulfadiazine and five per cent of sodium morrhuate. This composition is believed[11,55] to yield a better sclerosing effect with the additional benefit of bacteriostasis, but without any apparent increase in toxicity.

A number of workers[3,56,57] have reported on the usefulness and good results obtained with injections of sodium psylliate (Sylnasol) in the treatment of varicose veins and hemorrhoids. For example, after a trial of this product in 2,000 cases, Cooper[10] concluded that it "fulfills all the requirements for a safe and effective sclerosing agent in the treatment of varicose veins."

Used in the form of a five per cent solution, sodium psylliate is a mixture of the sodium salts of psyllium oil liquid fatty acids. Its sclerosing action is said[20] to be approximately equivalent to that of other fatty acid salts and it is subject to about the same frequency of allergic reaction to repeated use.

Ethylamine oleate (Etalate) is another of the soap type of sclerosants that are useful for the treatment of varicose veins and internal hemorrhoids.[52,58] It is provided as a sterile, five per cent solution that also contains two per cent of benzyl alcohol. Like other sclerosants of this group it must be used with due regard to the possibility that patients may be susceptible or allergic to the compound.[11]

A closely related compound, monoethanolamine oleate (e.g. Monolate), finds application in the sclerotherapy of varicose veins. Preferred by some American workers,[7,23] it is used in many British clinics[45] and is included in the British Pharmacopoeia under the official title of ethanolamine. According to Handley,[13] the popularity of monoethanolamine oleate is due to its

relative painlessness on injection, to the fact that a small "spill" into the perivenous tissues is harmless, and to the low incidence of sensitizations and general reactions. It is generally dispensed in the form of a five per cent solution together with two per cent of benzyl alcohol. However, as noted by Pratt,[21] five per cent of monoethanolamine oleate may also be combined with 25 per cent of glycerine in the sclerosing solutions.

Another variation employed by Boyd[59] provides a double effect; the sclerosing action being combined with opacity to X-rays. Offering several advantages with respect to safety and control of the injections, this radio-opaque sclerosing solution contains:

Sodium *ortho*-iodohippurate	**75.0 per cent**
Monoethanolamine oleate	**5.0 " "**
Benzyl alcohol	**2.0 " "**

The surface active agent, sodium tetradecyl sulfate (Sodium Sotradecol) has been the subject of several comprehensive reports[41,60,61,62] pointing to certain advantages from its use in the injection treatment of varicose veins and hemorrhoids. For example, from his experience with 327 patients with varicose veins, Cooper[63] concluded that a substantial improvement in sclerotherapy had been made possible through its use. Orbach[19,64,65] found that sodium tetradecyl sulfate was an effective agent for use with his new "airblock" technic. This procedure, he reported, yielded a greater incidence of varicose vein obliteration with less side reactions than was obtained with the conventional (e.g. "full vein" or "empty vein") technics.

Following a three-year study, Cowett[66] reported that sodium tetradecyl sulfate is a safe and effective sclerosing agent to use in the injection therapy of hemorrhoids. Fibrosis occurred more readily and patients became symptom-free in less time than when other sclerosants were used.

An evaluation[20] of the data on sodium tetradecyl sulfate indicates that because of its rather profound sclerosing action, the compound may have certain disadvantages. These include the possibility of a sloughing effect if an injection is made outside of the vein as well as the possibility that pain may be associated with the injections, especially from higher dosages. This is offset by the fact that the possibilities of sensitization are remote, and the rare idiosyncrasies or anaphylactoid reactions are mild and of short duration. Indeed, no toxic effects have yet been discovered.

Chemically designated as sodium-7-ethyl-2-methyl-4-hendecanol sulfate, sodium tetradecyl sulfate is available in one, three and five per cent solutions. Kelley[67] has reported that the injection of the five per cent solution successfully eliminated sebaceous cysts in 77 per cent of a series of cases. This, he suggested points to a new indication for the surface active compound.

It should be mentioned, before concluding, that the usefulness of synthetic surface active agents as sclerosants is not limited to sodium tetradecyl sulfate.

(Continued on page 834)

KOMMON/ SCENTS!

Even the losers are getting used to the outcome of the national elections. The only thing that disturbs Democrats and Republicans alike is the fear that some of the over-enthusiastic campaign charges and countercharges may be true.

●

Eisenhower's appointment of Henry Cabot Lodge as liaison with lame-duck Truman is a remarkable thing. This is especially true when one considers the legend that "the Cabots talk only to the Lodges and the Lodges talk only to God".

●

It's pitiful that the rules of politics won't permit Governor Stevenson a place in the new administration. It would be unkind to think that Ike might consider Adlai's pen mightier than his sword.

●

Most mysterious figure in the new shape of things to come is Senator Taft. Bitter critics suggested that Eisenhower had capitulated to him. So far, Taft was closer to making White House policy when his daddy was the White House tenant.

●

Best bets to drive the poll takers crazy are Senator Wayne Morse of Oregon and Governor James Byrnes of South Carolina. Republican Morse urged his state to go Democratic; Democrat Byrnes counseled his state to go Republican. Voters of both states told their august advisers where to go.

●

Perfectly understandable thing in a campaign where not too many things were: Eisenhower's decision to go to Korea. A natural choice when a feller considers the job ahead of the next President, for whose election all favor seekers already claim credit.

●

Election of Senator Richard Nixon to the Vice-Presidency may be counted a victory for television, certified public accountancy or his boyish smile. One can only presume that when he balances the nation's budget he will have time to do the same for his own.

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(Continued from page 833)

Reiner's[68] patent indicates that several other compounds of this class are suitable for sclerotherapy.

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Hazards of Cosmetic Use

(Continued from page 757)

defined. Primary dermatitis, so-called "contact" dermatitis, may occur, characterized by redness, swelling, rash, pain and associated inflammatory changes. Substances which cause contact dermatitis are automatically eliminated from cosmetic manufacture in a relatively short time since all users will be affected. The number of complaints will be so great that the manufacturer will hasten to withdraw the offending substance from sale. Thus, a natural survival of safe cosmetic ingredients operates to protect the consumer public. However, if a cosmetic preparation, considered generally safe, is applied to injured, abnormal or diseased skin or related tissues, there may be a secondary type of dermatitis which is not seen in the normal individual. Thus, any testing procedure should be carried out on both intact and abraded skin so that

the latter site may simulate that condition encountered when the preparation is applied to a traumatized area.

The most troublesome type of damage caused by cosmetics is that associated with allergic reactions. Allergy, or altered reactivity, encompasses many biochemical and physiological mechanisms, and constitutes a special branch of medicine. The material producing allergy is known as the allergen. It may be a single ingredient of a cosmetic, or it may be the reaction product of two or more components which are not identified if the components are tested separately. Allergies are in general "altered reactivity" and do not occur uniformly in all persons exposed to them. A cosmetic user may be allergic to a given component and manifest one or many abnormal signs when exposed by application of the cosmetic containing it to his body surface. One of the major arguments which has been advanced for legislation to require labelling of all cosmetic ingredients is that an individual may thereby be warned that the preparation contains a chemical to which he or she is allergic. It is a matter of question as to whether the user would avail himself of this information and in many cases, the specific allergen is not always known except by sad experience.

A similar type of potential hazard is that of "sensitization." The first contact with a new chemical substance may result in no abnormal or unpleasant symptoms. However, the individual may undergo a process of sensitization so that every subsequent exposure after an interval (varying from a few days to several weeks) results in a marked allergic response. Certain substances are known to be more active sensitizers than others and these are avoided by the prudent manufacturer. However, no test, however extensive can be entirely prophetic of sensitization for the process is independent of age sex, environment or color.

A primary irritant, if present in less than irritant concentrations, may act as a sensitizer. Some chemicals have a high potential for sensitization while others appear to be entirely free from this property.

Allergies have been reported in persons who have used a cosmetic for a long time without incident. A person who has suffered certain types of illness may find that he is susceptible to an allergen to which he formerly was completely resistant. The effect in true allergies is like that of increased formation of histamine. The ordinary type of cosmetic dermatitis or allergy usually disappears after the offending material is withdrawn, barring infection, but if the individual is hypersensitized and the exposure is repeated, the condition may progress to a chronic and refractory type of dermatitis lasting for months or even longer.

There is no such thing as a "non-allergenic" cosmetic although advertising claims would lead one to believe that they existed. It may properly be claimed that a cosmetic has low allergenic properties, but if sufficient subjects be used to test these properties inevitably a reactor will be found.

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absorption of ammonium hydrosulfide used in a permanent wave setting solution, dermatitis from synthetic resins used as "lacquer" in place of natural gums in hair lacquers, painful irritation of finger ends and loosening of the finger nails caused by nail enamel. Shampoos have been alleged to cause opacity of the cornea when inadvertently introduced into the eye. Irritating detergents in shampoos have within the year been reported to have caused blindness. Specific cosmetic injuries often result from the effort of consumer and beautician to treat frankly abnormal dermatological conditions which should properly be referred to a physician trained in skin diseases and skilled in their treatment.

It appears at this time that legislation requiring pretesting of new cosmetics will ultimately come into being. Few persons will question the desirability for pretesting of cosmetics, but there is no consensus as to who should do it, the kind and number of tests which should be carried out or how the interpretation shall be made. The American Medical Association and a few other groups have offered suggestions but these have not been standardized. At present, there are no standards nor any accepted tolerances for cosmetics. The cost of pretesting is not inconsiderable and would no doubt work a hardship on the small manufacturer if he were required to assume the entire burden. It has been proposed that a government agency be charged with the responsibility of pretesting in order to avoid duplication. The time which would be required to complete the tests, unless a very large staff were available during which sale of the product would necessarily be held in abeyance, makes this undesirable. Some compromise is probably inevitable. It would seem reasonable to propose that a board composed of representatives from the appropriate medical specialties, i.e. dermatology, pharmacology and pathology, from industry and from the Federal regulatory agency be set up to determine standards and procedures for the testing of cosmetics. The actual testing could then be done by industrial or independent laboratories together with dermatologists after which data could be submitted to the Federal regulatory agency for approval. An alternative would be to extend the activities of the professional organizations of the cosmetic industry, such as the Board of Standards of the Toilet Goods Association, although they would probably find it necessary and desirable to employ the services of independent consulting organizations. Testing of raw materials by the manufacturer can not be adequate, since in use, they are combined with other materials from other sources. Also, the same raw material may be obtained from several suppliers if the availability be limited.

Information on toxicity studies can best be interpreted by a team of persons trained and skilled in such diverse fields as normal and abnormal physiology and anatomy, toxicology and dermatology. Such teams can seldom be maintained by any but the most affluent manufacturers. They are available more commonly in consulting laboratories and in some universities.

Each cosmetic preparation should be tested by procedures designed especially for it. The selection of these will depend on a number of variables including the site of use, manner of exposure, the quantity used in each application and the intervals between each use. In our own laboratory, each material under test is compared with older cosmetics of the same type, with aged material, and with competitive products with respect to primary irritancy. In animals, testing is done on intact as well as abraded skin and biopsies are made for gross and microscopic examination. The sensitivity of the eye to the test material makes it especially suitable as a test site for irritation studies and we have worked out a composite scale which permits us to quantitate irritative responses with reasonably good reproducibility.

The determination of the allergy or sensitization potential must be done on human subjects although some information on sensitization may be obtained from animals. The technique of "patch testing" in use for about 20 years requires a panel of two to five hundred subjects and involves application of the material directly to the skin, a procedure not unfamiliar to persons who have suffered allergy from an unknown cause.

The use of guinea pigs to test for sensitization as proposed and used by the Food and Drug Administration is valuable but not an adequate substitute for human testing. A positive result with guinea pigs would indicate that the same result will occur in some humans yet a negative result from guinea pig sensitization would be inadequate to establish safety for human subjects.

The closed patch test on normal human subjects is best examined at 48 and 96 hours after application. These will demonstrate primary irritation as well as primary allergy if present. Dr. Louis Schwartz formerly of the Office of Dermatoses Investigation of the U.S. Public Health Service has proposed prophetic patch tests to be examined at 48 hours and reapplied in three weeks. This is usually a satisfactory method of showing sensitization. In addition, "use" tests made under medical supervision are needed and the group of subjects should number 600-1000 during a period of at least 5-6 months. The number of positive patch tests which will indicate a hazard varies with the opinion of the examiner, but in any case should bear some relation to the number of probable users of the product. Statistical projections of the number of cases needed for patch tests are difficult, but conclusions based on fewer than 200 subjects are hardly reliable. There is no uniformity of opinion as to the permissible tolerance of positive findings even among dermatologists and each test situation must receive independent evaluation and review.

It may be possible to apply the techniques of Operations Research, that new science in which mathematical methods and past experience are used to forecast probable future results. Each change in formula will require additional testing. Patch tests and "use" tests should

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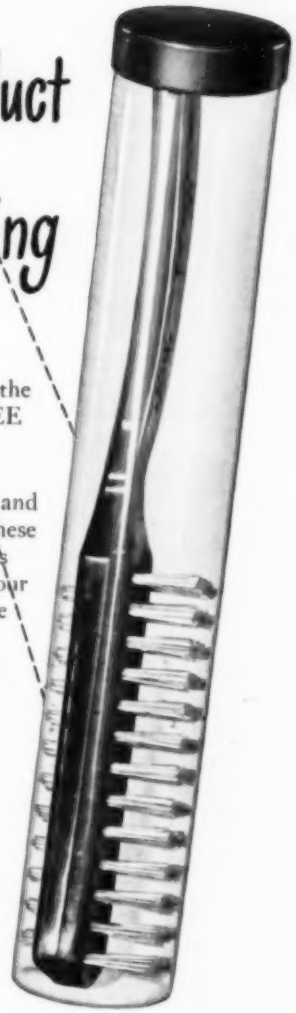

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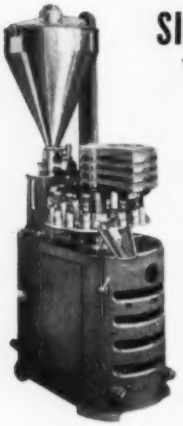

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not be carried out with employee groups. However objective they may wish to be, they are prone to produce the results in use tests which they believe to be desired by their employer. Since many patch tests are borderline in character, they must be read by a physician, either an allergist or a dermatologist, rather than by a technician or a beauty shop operator.

The incidence of damage from cosmetics can be reduced but never entirely eliminated by pretesting. One can never eliminate the unknown, potentially sensitive or sensitizable.

Almost every class of cosmetic has been reported at one time or another to have produced injury to one or more users. Those most frequently indicated have been hair dyes, hair straighteners, shampoos, nail polish, lipsticks, wave lotions, depilatories, deodorants or antiperspirants and perfumes, but when evidence regarding any class is objectively evaluated the evidence is based invariably on sensitization reactions. We have come to learn, largely by investigations in industrial toxicology, that certain organic chemicals are more notorious sensitizers than others and these have been removed from use in cosmetic manufacture with few exceptions.

Deodorants and antiperspirants are frequently charged with causing skin damage. Apart from sensitization reactions, the damage has probably been exaggerated and emphasized out of proportion of the true significance.

Depilatories as a class, like antiperspirants are frequently charged with producing damage but in the case of depilatories, it may be that active components such as the thiols and sulfides are also active as skin sensitizers. The possibility of abrading and traumatizing the skin during hair removal by any means is considerable. If infection follows, the damage may be extensive. Almost all methods of hair removal are temporary since the focus of hair growth is beneath the skin or scalp surface and it is usually undamaged as the hair is removed.

Surface active agents have come into wide-spread use in recent years in cosmetic manufacture. Their repeated use as detergents may inhibit the intrinsic antibacterial action of the skin and increase the predisposition to cutaneous infections. Human skin has a pH of 4.85 to 5.50 and is said to act as an "acid mantle." At this pH range, the growth of bacteria on intact skin is inhibited to a large extent without any other agency.

The value of adding estrogens or female sex hormones to cosmetics remains highly controversial. Their addition to cosmetics is said to reduce ichthyosis or dryness of the skin, to iron out wrinkles, to stimulate connective tissue and epithelial growth and to thicken the skin by causing tissue fluid to accumulate in the epithelial tissues. It has been claimed that application of estrogens to the skin in cosmetic preparation may cause breast tenderness and may even activate latent malignant growths. This action is said to have been demonstrated in animals by experiments in which inunctions of estrogens in fatty bases were rubbed into the shaven skin of cancer-susceptible mice followed by

prompt growth response from previously implanted tumors. No response was seen in similarly treated mice which did not receive estrogen treatment.

Although vitamin-containing creams offer no carcinogenic hazard, their value is also a matter of controversy. If taken by mouth utilization would be far more complete and the distribution in the body after oral doses would include the skin.

Whatever may be the true incidence of injury or damage from cosmetics, the problem is sufficiently noteworthy to receive recognition. Between 1950 and 1952, a series of hearings was held in various places by a Congressional Committee authorized "To Investigate the Use of Chemicals in Food and Cosmetics . . ." The chairman was the Honorable James J. Delaney of New York and the Committee has been commonly known by his name. Hearings were held from April to November, 1951 and from January to March, 1952. A total of 59 hearings were held and 217 witnesses representing public organizations, the Federal government, professional, and consumer groups and representatives of medicine and the food and cosmetic industries stated their views.

An important point of discussion was whether the present laws were adequate or whether new legislation is needed. Naturally, opinion was elicited to support either view. The cosmetic industry was well represented among the witnesses. Under the present law, it was emphasized that although adulterated or misbranded cosmetics can be seized, the corrective action can only come after personal injury has resulted. The pattern of examination of representatives of the cosmetic industry covered the type of raw materials used, the type of finished product manufactured, the method of testing, if any, the witness' opinion as to the need for mandatory pretesting, and whether more legislation is needed.

In the final report of the Delaney Committee, released in June 1952, after summarizing the activities of the committee, describing the nature and scope of their interest, a number of recommendations were made. If legislation results from them the effect on the cosmetic industry may be far-reaching. It was the conclusion of the committee that the effect of estrogenic hormones in cosmetics was too little understood to conclude that they were entirely harmless or potentially harmful. It was recommended that more information regarding these substances be obtained before any final conclusions can be reached. Other specific recommendations and conclusions of the committee were several. With respect to pretesting, most witnesses representing the cosmetic industry took the position that existing legislation was adequate to protect the public. Many urged better enforcement of the existing laws but agreed that no amount of mandatory pretesting could reduce damage from cosmetic injuries. At best, it seems that the industry differs greatly in its attitudes toward pretesting. Witnesses representing the field of medicine favored mandatory pretesting believing that present legislation is inadequate and urged that a cosmetic

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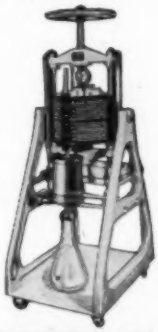

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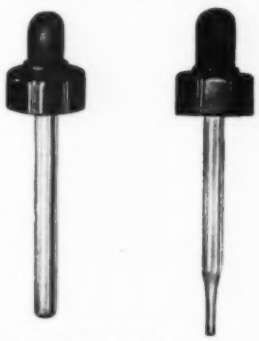

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manufacturer be required to submit proof of safety before distribution of his product.

The official recommendation of the Delaney Committee was that the Federal Food, Drug and Cosmetic Law be amended to require that cosmetics conform to essentially the same safety requirements as apply to new drugs. It now appears that a bill covering such recommendation will be introduced into the next congressional session.

A second recommendation was that soaps be included under the Act although soaps which have been marketed for a number of years without any complaint would be unaffected. The newer detergent materials, notably the surface active agents are the chief target for this recommendation.

The labelling of ingredients of cosmetics was recommended by allergists who stated that such a procedure would be helpful in treating patients who are believed to be suffering from the effects of some cosmetic ingredient. The recommendation that labelling be required for cosmetics was opposed by representatives of industry who believe that a long list of ingredients will destroy the attractiveness of the package. It was the view of the committee that the list need not be affixed directly to the package. Where the number of ingredients is long, it could be placed on a circular which would accompany the package. The committee recommended that provision for certain labelling exemptions be made for cosmetics as is now permitted for drugs and food additives.

The final recommendation with respect to cosmetics was that the existing exemption in the Food, Drug and Cosmetic Act be modified to prohibit those coal tar dyes which are known to have great potentiality for harm. A specific warning was recommended in the case of cosmetic preparations containing coal tar dyes known to be dangerous that under no circumstances should they be allowed to come in contact with the eyes. All this arises from past experience with paraphenylene diamine and its derivatives in hair dyes in which serious damage to forehead, ears, scalp and eyes has resulted.

Perhaps greater opposition was manifested during the hearings to mandatory labelling than to pretesting. The highly competitive nature of the cosmetic industry accounts in part for the reluctance to list ingredients either on the container or on an accompanying circular. It may become a requirement that the composition be made known to physicians who affirm that the information is needed in the treatment of a patient believed to have injuries originating from cosmetics.

Definite and prompt action on the part of the cosmetic industry might lead to an amicable solution of the matter of pretesting requirements. Some firms test their products and then submit the data to the Committee on Cosmetics of the American Medical Association or establish their good faith by conference with representatives of the Food and Drug Administration. The reputable, conscientious manufacturer believes that a law requiring pretesting of cosmetics will not affect his operation or costs materially. Cautionary

labels have not materially affected sales in the past if the product were otherwise acceptable. There is need for extension of the work of the Toilet Goods Association in setting up standards for raw materials. In the last 13 years, standard specifications for approximately 40 materials have been issued most of which are more rigid than those of the United States Pharmacopoeia or the National Formulary. This work is being carried forward at a university laboratory under a grant from the Toilet Goods Association.

What then is the actual situation with respect to hazards associated with cosmetics? It is apparent that toxic materials have been used in cosmetic formulations in the past and that injury has resulted to a certain number of users. With few exceptions, cosmetic manufacturers have been prompt to correct a hazardous situation once called to their attention. It is probably true that pretesting can reduce the incidence of cosmetic injuries, yet the testimony before the Delaney Committee shows that pretesting has long been done by prudent manufacturers. The basic weakness in my opinion is in the lack of standards for such testing procedures. Legislation which will require testing without specifying the criteria to be employed will add immeasurably to the existing confusion and do relatively little to protect against hazards which at present do not appear to be appreciable when one compares them with hazards from other sources obtaining in other phases of American life. If it ever was needed, this is the time for the cosmetic industry to take the initiative, else there is a great danger that the objectives of pretesting will be lost in a maze of legislative reform.

The Lipotropic Agents

(*Continued from page 749*)

lipotropic agents have a beneficial effect on this condition, presumably by increasing or facilitating the biosynthesis of choline.

If allowed to proceed, fatty infiltration leads to cirrhosis and it has been suggested[5] that the mechanism of this process is a mechanical one; that the deposits of fat restrict the passage of nutrients to the centrilobular liver cells which consequently atrophy and are replaced by fibrous material. This impairment of intralobular circulation could result in the partial exclusion from the system of essential metabolites or the development of anoxia and this, in turn to the disease symptoms.

An important fact about cirrhosis is that there is a stage during which it is reversible and anatomical recovery is possible. According to the above theory of the mechanism of its development, the reversible stage would last while the restriction of intralobular circulation is chiefly due to sinusoidal compression by distended liver cells. But, when the process has reached the point where the distortion is mainly due to fibrosis and the formation of nodules, then cirrhosis is irreversible. Possibly for this reason, lipotropic therapy is more successful when it is treating early stages of the disease—though the extent of the cirrhosis should be

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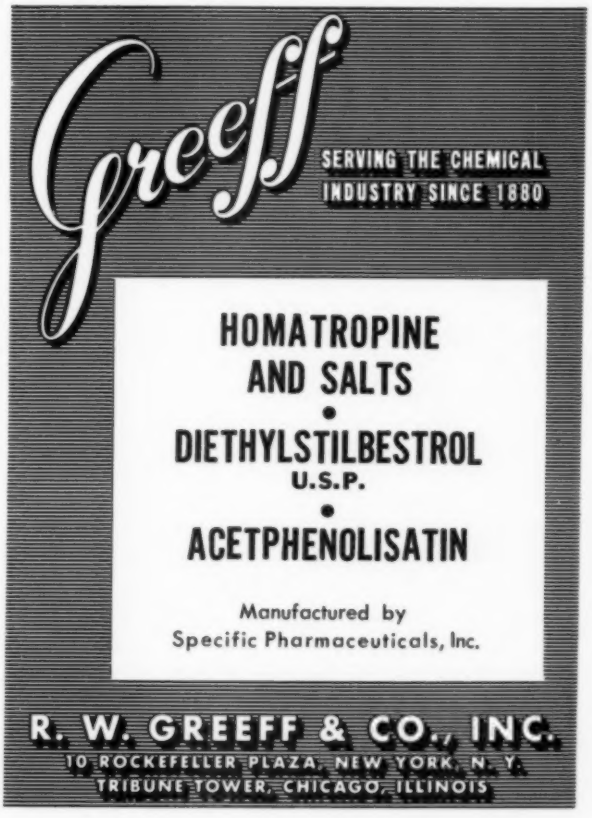

measured not soley from the duration of the symptoms but by the presence or absence of ascites, that is, the condition in which there is an accumulation of fluid in the peritoneal cavity.

Although not all human cases of cirrhosis respond to lipotropic therapy so favorably as the experimental forms induced in animals, there is a concensus of agreement that cholinè and methionine definitely enhance the beneficial effect of a high protein diet. It has been suggested that those cases which do not respond well to the treatment may be suffering from a type of cirrhosis that is not directly attributable to a dietary deficiency. In other words, it is not certain that the present histological differentiation of the disease is as accurate as it might be. Another point, that has emerged from the clinical experience with these compounds, is that they are not identical in their effects and that the removal of fat from the liver is not the only desirable influence they exert on the course of the disease. Whether this is to be attributed to the fact already mentioned, that they have several biological functions and to the biochemical interdependence of each on other metabolites, or whether it indicates an, as yet undiscovered, aspect of the problem, is not known.

It seems that the pathologic changes that take place in the liver and culminate in cirrhosis can be attributed mainly to a disharmony between the consumption of energy supplying food and certain essential metabolites, among which are choline and methionine. But their action is prophylactic rather than therapeutic that is to say, they can prevent the appearance of the pathologic changes but once the latter have developed, it may not be possible to reverse them by correcting the deficiency of lipotropic factors.

The success of choline or methionine supplements in preventing deposition of fat in the liver, raised the question of whether they could also prevent other types of lipid deposits, particularly aortic arteriosclerosis. There is experimental confirmation of the belief, that high levels of cholesterol in the blood lead to its deposition in the arteries and this causes, first, arteriosclerosis and, eventually, either local or generalized arteriosclerosis. Although, chemically, cholesterol is not a fat, it is usually associated with fats and resembles them in some of its physical properties. Tests on rabbits[6] have shown that by feeding an excessive quantity of cholesterol together with a lipotropic agent, the deposition in the arteries can be greatly reduced in spite of the existence of a high concentration of cholesterol in the blood. Following on this, a test[7] with a group of 200 patients suffering from coronary thrombosis was made, in which they were divided randomly into two numerically equal groups. One group was given choline bicarbonate by mouth in doses varying from 6 to 32 grams daily while the control group received only symptomatic treatment. Thirty per cent of the control group died within three years compared with 12 per cent of the choline treated group. In this test, the dose of choline appears to have varied very widely and it is reported that those patients able to tolerate a large dose showed the most marked improvement. Taking into account, that the choline is unlikely to have much effect on any but relatively fresh deposits, the difference in mortality between the two groups in this series is highly significant.

Inositol has also been found to be beneficial in conditions involving cholesterol deposits. There is a suggestion that it functions by reducing abnormally high blood cholesterol levels. If so, this appears to involve a different mechanism from choline which is not reported to reduce the concentration of cholesterol in the blood but prevents its deposition in the arteries.

Generally, therapeutic agents fall into one of two classes: they are themselves metabolized or they affect one, or more, of the metabolic processes without taking part directly in it. The lipotropic factors are in the first class—in order to exert their effect they have to be metabolized. A full understanding of the living processes in which they are involved would greatly help their clinical use but unfortunately this mystery has not yet been unravelled. Mention has already been made of the different biological functions that they perform and one difficulty is to decide which possible chemical mechanism pertains to which function. The ability to transfer methyl groups from one substance to another has been shown to be closely involved in the prevention of fatty deposition within the liver but, in view of the activity of inositol, there may be other ways of exerting a lipotropic effect. It has been suggested that these agents act by transforming fat in the food into phospholipids, which are readily metabolized; that a slowing down in the rate of conversion to phospholipids results in a reduction in the rate of fat metabolism and, consequently, of its deposition in the liver. This theory could be applied directly to choline and inositol because they are known to be constituents of phospholipids but methionine could be brought in, only indirectly by postulating that it increases the concentration of labile methyl groups within the body and thus facilitates the biosynthesis of choline which then increases the conversion of fats to phospholipids. Exactly how one of the fatty acid radicles in the fat molecule is replaced by the phosphoric acid ester grouping, which is required to give a phospholipid, is not known. Up to date however, this is the most likely basis for the lipotropic effect.

A normal diet is rich in lipotropic factors. The daily intake will lie between 300 and 900 mgm of choline and 2 to 4 grams of methionine. Assuming one quarter of the latter is used for lipotropic purposes, that will be equivalent to, at the most, an additional 400 mgm of choline; so that, an adequate human diet is expected to provide up to about 1.3 grams of choline per day. On the assumption that choline is used mainly for purposes of fat transport, this should be sufficient to prevent any deficiency symptoms; there is no reason to believe this is not so and therefore lipotropic therapy is not called for in cases where the diet has been, and is, adequate.

However, it has been shown[8] experimentally that removal of the pancreas or ligation of the pancreatic ducts in animals, affects their digestion of protein and so, diminishes the amount of methionine available to the body. This would reduce the "pool" of labile methyl groups and might adversely affect the biosynthesis of choline. It has also been shown that deposition of fat occurs in the livers of such animals, receiving insulin. These experiments suggest that, though there is no evidence that on a normal diet a pathologic state due to choline deficiency can develop, yet the clinician should keep in mind the possibility of liver damage in cases where the pancreatic secretions have been reduced for a long time.

In weighing up the advisability of supplementing a diet by addition of lipotropic factors, a distinction should be made between the body's requirements of choline and methionine as intact molecules—that is, for structural and growth purposes that call for the biological consumption of a nitrogenous base or an amino acid—and its requirements of a particular radical in this case of labile methyl groups to carry out biological methylation. The distinction is desirable because the demand for the intact molecule is likely to take precedence, in the body to the demand for a specific atom or radical.

Lipotropic agents are usually given as capsules containing 100 mgm of inositol, 100 mgm of dl methionine (the synthetic racemic form of the amino acid is used instead of the biologically active, laevo form, because it is much cheaper and by giving a larger quantity the same effect can be produced as with the laevo form) and 200 mgm of choline dihydrogen citrate or choline bitartrate. These salts of choline are used in preference to the more easily made chloride because their taste is less acidic; they have the disadvantage of being less soluble in water and are, therefore, not suitable for the preparation of elixirs or syrups. For these, the chloride is usually used although, recently, the gluconate, which is very soluble, has been put on the market.

Preparations containing only choline are usually given as syrups. As well as the chloride and the gluconate, the bicarbonate is also used. The precise dosage for choline treatment has not been unanimously agreed upon and it varies from the equivalent of two to six grams of the base, in divided doses, per day. Oral administration is always followed.

Although lipotropic therapy has not yet reached so precise a stage as some of the older forms of chemotherapy, it does appear to be a valuable adjunct to the treatment available for conditions in which fat transport within the body has broken down. It is more specific and helps the physician to avoid the indiscriminate, blunderbuss therapy with proteins, amino acids and vitamin B factors. However, it has definite limitations and it seems, that for favorable results the following conditions should be complied with:

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2. subjection of the liver to toxic conditions must be discontinued.

3. the metabolic activity of the liver should be reduced as far as possible.

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Chlorophyll and Derivatives

(Continued from page 759)

a concentration of 0.2 per cent control breath odors and have a healing action in the mouth. Serling (*Vet. Med.* 45:291, 1950), for example, reports that he needed 100 milligrams of chlorophyllin per twenty-five pounds of dog to conquer the animal's offensive odors within twenty-four hours of a single dose.

For the consumer it is essential that the amount of chlorophyllin per dose unit be specified on the label. Only by public insistence upon information like this can chlorophyll products be used intelligently and effectively challenge competing agents. It is safe to say that with increased chlorophyll production and with the extension of the claims for it, the much needed label data will be forthcoming. To induce this, the 1951 edition of New and Non-Official Remedies issued by the Council on Chemistry and Pharmacy of the American Medical Association indicates the kind of information the Council will demand before accepting any given product. Describing only one chlorophyll ointment, this edition lists the percentage of chlorophyllin present and methods for identifying the compound.

Menthol at the Crossroads

(Continued from page 747)

Prior to 1930, Japan was the only country producing menthol in commercial quantities; Brazil did not get started until 1936. Even peppermint growers in China, before 1930, sent their essential oil to Japan for menthol extraction, a routine which persisted until a few years before the second world war, when China emerged as a third independent menthol producer.

The United States dabbled in the menthol market some time after 1920 in the San Joaquin Valley, California, but this effort was short-lived, as it was impossible to compete with the cheaper Japanese prices.

Brazil's menthol history, oddly enough, dates back to the 1923 earthquake in Japan. Following that calamity, many Japanese planters emigrated to South America, taking with them a few of their mint plants. By 1936 these emigres were producing experimental quantities of menthol, and it was not long before they entered the world market. In subsequent years Brazilians took over the plantations, and finally, that country

assumed the world leadership when Japan entered the second world war.

This was the first time Brazil had ever become chief supplier to the United States, and to the world. But it is becoming apparent that in the future Brazil will have to share the world market with Japan and, perhaps, China.

If and when China becomes an important menthol competitor again, this will mark the first appearance of three coexistent menthol-producing countries. With Brazil and Japan now able to provide enough natural menthol, and France and the United States, enough synthetic material, to meet all demands, there is every reason to speculate on the effects of a third producer arriving on the scene.

The following U.S. import figures indicate the changing trends and importance of these three menthol sources during the past 18 years, since the United States is the largest single importer of the commodity.

	1935-1942	1943-1951	Jan.-Aug. (1952)
Japan	1,895,981 lbs.*	212,113 lbs.	24,900 lbs.
Brazil	.....	3,047,372	263,690
China	666,041	1,002,571	6,760

*Figures represent total imports into the U. S. during respective periods.

Annual world consumption of the natural menthol is now estimated at 700,000 pounds. The anticipated 1953 Brazilian crop is 400,000 pounds; Japan's new crop will be 300,000 pounds. This does not count the 60,000 pounds now on spot in New York, or the 100,000 pounds of carry-over in Brazil. Nor does it count the synthetic menthol production.

United States production figures on the synthetic material are not available because there are only about three companies manufacturing it. Several authorities have stated, however, that of the total menthol consumed today, three-quarters is the natural product and one-quarter, the synthetic.

There is a wide diversity of opinion on the importance of synthetic menthol. Some declare it is negligible; others, that it has had a very definite stabilizing effect on the natural. The latter view contends that, as long as synthetic maintains its foothold, the natural will cease to be so speculative, with alternate high and low price levels.

Whichever school of thought is more nearly correct, synthetic menthol has very definitely grown in importance since its first manufacture in America in 1936.

The pre-world-war over-all annual consumption of natural menthol amounted to 500 tons; today, it has been reduced to 350 tons, with the U.S. consuming 300 tons. Synthetic menthol has, presumably, made up the difference.

In spite of its apparent secure position, synthetic menthol would most likely be the first to suffer severe consequences, should Brazil, Japan and China all suddenly compete for the lion's share of the market. Such a competition would force the natural menthol price to such low levels that manufacturers could not afford

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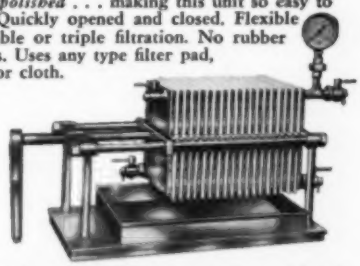

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to produce the synthetic material. So say the synthetic producers themselves.

Synthetic menthol finds itself in this unfavorable position by virtue of its quality. If the prices of all the menthol grades were the same, consumers would prefer the Japanese and Chinese menthols above all others; then the Brazilian; then the synthetic laevorotatory; with the synthetic racemic at the bottom of the list.

This order of preference is adhered to among manufacturers of such items as cough drops and cigarettes, where taste is of paramount importance. The superior grades of menthol, having larger crystals, impart a stronger, cleaner and much sharper taste to the preparations in which they are used.

Natural menthol is laevorotatory by nature. It retains a slight taste of the peppermint oil from which it is obtained. The synthetic laevorotatory product, l-menthol ($5.24 a pound), prepared from Java citronella oil, is sometimes sprayed with peppermint oil in order to produce the characteristic taste. The racemic material ($4.75 a pound), dl-menthol, is derived from metacresol and thymol.

The l-menthol is preferred to the racemic variety in pharmaceutical preparations and in those products having cooling properties, but, as far as could be gathered from the manufacturers, they both enjoy a fairly equal demand among the consumers.

Reviewing the menthol market as it appears today, with the possibility of three countries simultaneously competing for the first time in menthol history, coupled with the looming importance of synthetic material, it is becoming increasingly clear that menthol is on the threshold of a new era. Whether these three nations, Brazil, Japan and China, will be able to share the menthol market amicably, or whether there will be a further price decline of serious proportions, remains to be seen. It is yet to be determined how the synthetic menthol will fit into the new picture. To predict the course menthol will take in the next ten years would be folly; however, it seems certain that it is approaching the crossroads.

New Cosmetic Raw Materials

(*Continued from page 755*)

atives of the different mono esters so that it is possible to choose a combination of emulsifiers for water-in-oil or oil-in-water emulsions and with other more highly ethoxylated derivatives and means of breaking the colloidal size of the dispersed place down to a point which renders the final product as clear as a solution to the eye. The sulfated fatty alcohols particularly the stearyl alcohol has also found increased usage as an emulsifier—as have quaternary ammonium compounds.

Synthetic gums, specifically the methyl celluloses, solium carboxy methyl celluloses and the hydroxy celluloses, have grown in use in cosmetics. They have by no means replaced the more traditional tragacanth, quince seeds, or other natural gums, but have found certain definite places for themselves or are used in con-

junction with them. The great advantage offered by any synthetic materials of this type in a standardization from batch to batch which is not always true of natural products. Viscosities from batch to batch of finished preparations therefore do not have to be corrected to conform to a standard as in common practice with natural gums. There are, however, some characteristics of natural gums,—such as slip incorporated to the product—which are not present to the desired degree in the synthetic product, and though a complete replacement may be thought of as desirable it is not always possible if other characteristics inherent in individual natural gums are to be retained.

More highly refined derivatives of carrageenin are now available which makes their incorporation easier as compared to the older method of mucilage formation and treatment. These compounds, because of their easier incorporation, are growing in usage.

The current popularity of the new highly indelible lipsticks is largely due to the availability of several polyhydroxy compounds which are good solvents for the colors being used to stain the lips. The choice of solvents varies with the different manufacturers, but it is generally known that both propylene glycol and one of the ethylene glycol polymers is being used. Other compounds recommended for this purpose are the several esters of tetra hydro furfurol—which use is covered by a patent.

There is one underlying factor common to all products discussed above and that is the fact that all of these have been developed for use in other industries and then have found cosmetic application. This is due in greatest part to the fact that there is a greater volume of sales potential in the textile manufacturing operation or food processing—for example. The cosmetic formulator could take advantage of this situation however by closely watching the new developments taking place in other fields.

Essential Oils in Europe and Africa

(*Continued from page 761*)

prices. It is true that in general the quality of the Italian Concrete is not equal to that of the French but once the Italian producers have acquired the necessary "know-how" in cultivation, harvesting and extraction, the Italian product will be a most serious competitor of the Grasse Jasmine Concrete.

Citrus Oil Industry of Sicily and Calabria

With respect to citrus oil production in this region, there is little new to report except that in the case of lemon oil, hand sponging has been practically abandoned, all of the fruit now being processed for oil in Sfumatrici. Complaints registered in the United States during the last few years regarding the inferiority of Sicilian Lemon Oils reaching the overseas markets can be explained by the following:

1. No more handpressing is practiced in Sicily. This

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method yielded oils with a high citral content (about 4 per cent in most cases). Even the best Sfumatrici used today produce lemon oils with a lower citral content, due to the fact that a part of the citral is lost in the spraying water.

2. Years ago, the region of Messina south to Santa Teresa was covered with high-yielding lemon trees which produced a very fine quality of oil with a high citral content. All of these trees have now disappeared as a result of a disease—Malo secco. Of late, a new variety of tree has been planted, a small tree, resistant to the disease, the so-called Monachella which, however, produces lemons with a low content of citric acid and an oil with a very low citral content.

3. Widespread adulteration on the part of unscrupulous exporters—and even producers. Large quantities of badly adulterated Italian citrus oils appeared on the overseas market after the last war and this practice of adulteration has gravely undermined the reputation which the Sicilian oils formerly held.

Patent Thoughts and Trends

(*Continued from page 813*)

2,615,827—**Standard Oil Development Co.—Fungicidal and Insecticidal Preparations containing chlorinated Duroquinone.**

2,615,829—**Commercial Solvents—Riboflavin Production.**

2,615,830—**Commercial Solvents—Penicillin Production.**

2,615,884—**Wyeth, Inc.—Preparation of Cardio-Active Glycoside.**

2,615,886—**A. Astra, Apotekarnes Kemiska Fabriker—10-Pyrrolidinoacyl-Phenothiazines.**

2,615,890,1—**American Cyanamid — Pteridines Preparation.**

2,615,894—**Sterling Drug—N - Heterylalkyl - Isobutyl-(2-Thienyl) Acetonitriles.**

2,615,895—**Sterling Drug—3,5 - Diiodo - 4 - Pyridylmercapto-Carboxylic Acids.**

2,615,896—**Hoffmann-La Roche—3 - Pyridyl - Carbinol Preparations.**

2,615,897—**Casella Farbwerke Mainkur—Hydantoins Containing Basic Substituents.**

2,615,902—**Merck & Co.—Desoxycholic Acid Process.**

2,615,903—**The Upjohn Co.—Reduction of 11 - Keto-Steroids.**

2,615,904—**Sterling Drug—5,7 - Bisdehydrosteroid Preparation.**

2,616,826—**Am. Cholesterol Products, Inc.—Blood Platelet Count Influencing Factors Preparation.**

2,616,890—**American Cyanamid — Halogenated Olefin Pyridine Derivatives.**

2,616,892—**Burroughs Wellcome — Quaternary Salts of 2,7-Diamino-9-Alpha-Thienyl-Phenanthridine.**

2,616,895—**J. R. Geigy—N - (imidazolinyl) - (2) - methyl)-iminodibenzyl.**

2,616,903—Parke, Davis—Preparation of Unsaturated Steroid Alcohols.

2,616,913—Soc. des Usines Chemiques Rhone Poulenc—2-Amino-4-Sulfonamide-Phenylarsenic Acid.

2,617,753—J. R. Geigy—Fungistatic Preparations.

2,617,754—Procter and Gamble—A cosmetic cream having plastic to creamy consistency at 60° to 100° F., easily spreadable to a thin colorless film when rubbed on human skin and easily removable therefrom by rubbing with water, whereby a creamy lather is formed, said cream being a homogeneous mixture comprising at least 35 per cent by weight of mineral oil, from 15 to 40 per cent by weight of petrolatum, from 15 to 30 per cent by weight of an alcoholic hydroxyl-bearing firming agent melting about 120° F. and selected from the group consisting of high molecular saturated normal primary aliphatic alcohols monoamides of substantially saturated fatty acids of about 14 to 18 carbon atoms with alkylolamines of 2 to 4 carbon atoms and monoesters of substantially saturated fatty acids of about 12 to 18 carbon atoms with saturated aliphatic polyhydric alcohols of 2 to 3 carbon atoms, from 3 to 8 per cent by weight of an organic nonionic emulsifying agent having balanced lipophilic and hydrophilic properties and having the formula RXY(Z)w where R is a monovalent hydrocarbon radical of about 10 to 30 carbon atoms, X stands for a bivalent structural element selected from the group consisting of—O—, —S—, —COO—, —CONH—, —CON(CH_3)—, and —CON(C_2H_4OH)—, Y is the polyvalent residue after removing one hydroxyl group and at least one active hydrogen atom from a saturated aliphatic polyhydric alcohol of 2 to 6 carbon atoms, Z is the monovalent residue remaining after removing one hydroxyl group from a polyalkylene glycol of at least 10 carbon atoms, there being 2 to 3 carbon atoms in each alkylene unit thereof, and w is an integer from 1 to 5, and from 0.5 per cent to about 2.0 per cent water, said cream consisting at room temperature of a plurality of phases one of which is liquid and constitutes at least 50 per cent by weight of the cream, mineral oil constituting at least 50 per cent of this phase, and another of which phases is solid and comprises predominantly a mixture of mineral wax and higher alcohol in finely dispersed microcrystalline form.

2,617,801—The Upjohn Co.—Adducts of 9,11-Oxido-5,7-Pregnadien-3,20-Dione.

2,617,802—The Upjohn Co.—Adducts of 5,7,1 (11)-Pregnatrien-3,20-Dione.

2,617,808—Abbott Labs.—4 - Thiazolidone - 2 - n-Caproates.

2,617,812—Merck & Co.—Process for Producing Delta 9,11 - 12-Keto Steroids from Delta 8,9 - 12-Keto Steroids.

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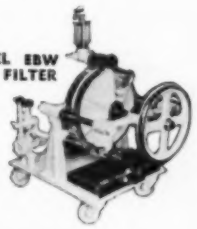

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